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ABSTRACT

The National Advisory Committee on Dyslexia and Related Reading Disorders explored in some depth the magnitude and nature of the reading problems which prevail among school and adult populations today. The group examined scientific papers and worked to analyze the dimensions and directions of existing programs in the field. Attention was paid primarily to the problems manifested by those individuals who, in spite of apparently adequate intelligence and emotional stability, exhibit difficulties in learning to read within a teaching program that proves effective for most children. Fifteen percent of the total school population today are considered members of this group. The committee decided that they could not arrive at a definition of dyslexia which would receive general acceptance, so they addressed themselves to the general problem of reading disorders. The group reviewed the magnitude and impact of this problem, the nature of the disorders, and remedial programs and procedures which now exist. They also proposed certain steps toward the development of a national program whose ultimate objective would be to assure that every child in this country who has the ability will learn to read. (Author/NH)

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READING DISORDERS IN THE UNITED STATES

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Report of
The Secretary's (HEW) National Advisory Committee
on Dyslexia and Related Reading Disorders

August 1969

RE002 430

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

OFFICE OF THE SECRETARY
NATIONAL ADVISORY COMMITTEE
ON DYSLEXIA AND
RELATED READING DISORDERS
BETHESDA, MARYLAND 20014

August 19, 1969

Dear Mr. Secretary:

It is a pleasure to present to you the report of the National Advisory Committee on Dyslexia and Related Reading Disorders. This report reflects the best efforts of the twenty members of the Committee during a period of one year, beginning in August 1968. It has been my very distinct honor to serve as chairman of this distinguished panel.

The report deals with a problem of prime importance to the American people. Because your Department, through its various Bureaus and Agencies, has already undertaken considerable effort in this field, the Committee's principal recommendations emphasize coordination of the diverse efforts now in evidence and the establishment of a national program to bring these efforts to a focus. A modest budget will provide the support needed for the recommended program.

If there is any way in which the Committee may be of additional assistance to clarify or expand upon any items within the report, we are at your call.

Again, it is an honor to have served you and a pleasure to present this report on behalf of the entire Committee.

Respectfully yours,

A. B. Templeton

A. B. Templeton
Chairman

The Honorable Robert H. Finch
Secretary of Health, Education,
and Welfare
Washington, D.C. 20201

THE SECRETARY'S (HEW) NATIONAL ADVISORY COMMITTEE
ON
DYSLEXIA AND RELATED READING DISORDERS

Arleigh B. Templeton, Ed. D., Chairman

Stanton J. Barron, Jr., M.D.
Arthur L. Benton, Ph. D.*
Gaston E. Blom, M.D.
N. Dale Bryant, Ph. D.
John B. Carroll, Ph. D.
Jeanne S. Chall, Ph. D.
Katrina de Hirsch, F.C.S.T.
Nathan Flax, O.D.
J. Roswell Gallagher, M.D.
Miriam P. Hardy, Ph. D.

Norris G. Haring, Ed. D.
Frank M. Hewett, Ph. D.
John V. Irwin, Ph. D.
Jane B. Levine, M.S.
Richard L. Masland, M.D.
Frank W. Newell, M.D.
José San Martin, O.D.
Donald E. P. Smith, Ph. D.
Charles R. Strother, Ph. D.
Marion D. Thorpe, Ph. D.

Charles A. Ullmann, Ed. D., Executive Director

STAFF MEMBERS

Eloise O. Calkins, M.A.
Brenda C. Hart
Arlene B. Jones, M.A.

Patricia E. Lane, M.A.T.
Margot A. Lyddane
Elizabeth W. Snowden
Rita Sures

CONSULTANT

James F. Kelleher, B.A.

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*Resigned March 14, 1969.

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FOREWORD

The Secretary's (HEW) National Advisory Committee on Dyslexia and Related Reading Disorders was created in August 1968 by former Secretary of Health, Education, and Welfare, Wilbur J. Cohen.

The Secretary asked the Committee to:

(1) Examine in detail the areas of research, diagnosis and evaluation, teacher preparation, and corrective education with respect to dyslexia and related reading disorders;

(2) Make recommendations concerning the need for a continuing national program to deal with this problem;

(3) Note gaps to which attention should be directed, recommend priorities for a program to meet the needs of children or adults with these problems, and suggest ways to develop national concern and support for further work.

The panel of interested citizens called upon to examine the scientific evidence relating to reading disorders and to develop recommendations for a framework of public action were:

Chairman:	Arleigh B. Templeton, Ed. D., President, Sam Houston State College, Huntsville, Texas.
Members:	Stanton J. Barron, Jr., M.D., Pediatrician and Chairman, Texas House of Representatives Committee on Language Disorders, Abilene, Texas.

*Arthur L. Benton, Ph. D., Professor of Psychology and Research Professor of Neurology, University of Iowa, Iowa City, Iowa.

Gaston E. Blom, M.D., Director, Day Care Center, University of Colorado Medical Center, Denver, Colorado.

N. Dale Bryant, Ph. D., Professor of Psychology and Education, Teachers College, Columbia University, New York, N.Y.

John B. Carroll, Ph. D., Senior Research Psychologist. Educational Testing Service, Princeton, New Jersey.

Jeanne S. Chall, Ph. D., Professor of Education and Director of the Harvard Reading Laboratory, Harvard Graduate School of Education, Cambridge, Mass.

Katrina A. de Hirsch, F.C.S.T., Director, Pediatric Language Disorder Clinic, Columbia-Presbyterian Medical Center, New York, N.Y.

Nathan Flax, O.D., Optometrist and Member, New York State Board of Examiners in Optometry, New York, N.Y.

J. Roswell Gallagher, M.D., Clinical Professor of Pediatrics, Yale University School of Medicine, New Haven, Connecticut.

Miriam Pauls Hardy, Ph. D., Associate Professor, The Hearing and Speech Center, The Johns Hopkins Hospital, Baltimore, Maryland.

Norris G. Haring, Ed. D., Director, Experimental Education Unit, Mental Retardation and Child Development Center, University of Washington, Seattle, Wash.

Frank M. Hewett, Ph. D., Chairman, Area of Special Education, Department of Education, University of California, Los Angeles, California.

John V. Irwin, Ph. D., Professor of Speech Pathology and Audiology, University of Kansas, Lawrence, Kansas.

Jane B. Levine, M.S., Research Associate, Graduate Reading Clinic, School of Education, University of Pennsylvania, Philadelphia, Pennsylvania.

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*Resigned March 1969.

Richard L. Masland, M.D., Professor of Neurology and Chairman, Department of Neurology, College of Physicians and Surgeons of Columbia University, New York, N.Y.

Frank W. Newell, M.D., Professor and Chairman, Section on Ophthalmology, University of Chicago, Chicago, Illinois.

José San Martin, O.D., Optometrist and Member, Board of Regents, State Senior Colleges of Texas, San Antonio, Texas.

Donald E. P. Smith, Ph. D., Professor of Education and Director of the Center for Research in Language and Language Behavior, University of Michigan, Ann Arbor, Michigan.

Charles R. Strother, Ph. D., Director, Child Development and Mental Retardation Center, University of Washington, Seattle, Washington.

Marion D. Thorpe, Ph. D., President, Elizabeth City State College, Elizabeth City, North Carolina.

PREFACE

Eight million children in America's elementary and secondary schools today will not learn to read adequately. One child in seven is handicapped in his ability to acquire essential reading skills. This phenomenon pervades all segments of our society--black and white, boys and girls, the poor and the affluent.

Yet, despite their pervasiveness among our student population, reading disorders have received little in the way of concentrated, interdisciplinary attention. Parents and school administrators have received little reliable guidance toward the prevention and remediation of reading disorders. The problem of reading and reading instruction has not, unfortunately, been treated as part of the broad base of our growing national commitment to adequate education.

Throughout a year of regular meetings, the Committee explored in some depth the magnitude and nature of the reading problems which prevail among our school and adult populations today. Scientific papers came to the Committee from various sources which represent contemporary thinking and the state of knowledge in the many disciplines that can contribute to better understanding of the reading process and reading problems. The Committee staff has worked to analyze the dimensions and directions of existing programs in this field.

The Committee met in various parts of the country, visiting projects and hearing from professionals in public and private organizations. The Committee received the utmost in cooperation. It also solicited and received suggestions from various professional organizations in the reading field. The suggestions and background materials received from these sources yielded a broad perspective of the nature of the problem and the issues to be resolved. Particularly helpful have been the Offices and Bureaus of the Department of Health, Education, and Welfare.

The Committee reached full agreement on its recommendations while maintaining different points of view with respect to priorities and emphasis.

The Secretary's (HEW) National Advisory Committee on Dyslexia and Related Reading Disorders herewith presents its full report and recommendations.

INTRODUCTION

The factors contributing to a child's inability to learn to read are both numerous and complex: they include mental retardation, neurological or sensory dysfunction, emotional disorders, environmental deprivation, and, of course, inadequacy of instruction. The Committee recognizes that large national programs exist for the retarded, the physically handicapped, and the underprivileged. Therefore, the Committee has addressed its attention primarily to the problems manifested by those individuals who, in spite of apparently adequate intelligence and emotional stability, exhibit difficulties in learning to read within a teaching program that proves effective for most children. Studies indicate that approximately 15 percent of the total school population conforms to this description. This number could certainly be reduced by the improvement of regular classroom instruction. But a majority of these children, in order to overcome their handicaps and complete a normal educational experience, need remedial assistance.

This Committee was designated the "National Advisory Committee on Dyslexia and Related Reading Disorders." However, after an extensive review of the literature and of the opinions of the scientific and professional community, the Committee unanimously concluded that there was no prospect of arriving at a definition of "dyslexia" which could be accorded general acceptance.* Consequently, the Committee chose to address itself to the general problem of reading disorders.

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*See page 36 for listing of various positions.

In its report, the Committee has reviewed the magnitude and impact of this problem, the nature of these disorders, and existing programs and procedures for their remediation. Furthermore, it has proposed certain modest steps toward the development of a national program whose ultimate objective would be to assure that every child in this country who has the ability will learn to read.

The next section of this report contains a summary of the Committee's conclusions and a statement of its major recommendations. The following sections present a more detailed consideration of various aspects of the problem of reading disorders and means for alleviating this problem on a national scale. The final section describes in detail steps that may be taken toward a national program and sets forth an estimate of the cost of launching such a program.

SUMMARY AND RECOMMENDATIONS

Within the existing educational system across the nation, an estimated 15 percent of otherwise able students experience difficulty in learning to read. This difficulty is of sufficient severity to impair seriously the overall learning experience of these students and their ultimate usefulness and adaptability to a modern society. Among the underprivileged, the problem is even more pervasive.

A student's initial failure in learning to read can have enormous consequences in terms of emotional maladjustment, tendency towards delinquency, likelihood of becoming a dropout, and difficulty in obtaining employment. The economic loss to the nation as a result of these failures is incalculable.

The complex reasons for widespread reading failure include innate, environmental, and educational factors. One thing is clear: a sizable minority of students are unable to profit from reading instruction which seems adequate for the majority. Early identification of such students and special intervention in their training may be necessary if they are to overcome their difficulties and become capable of satisfactory achievement. At this time there exists no one generally accepted procedure suitable for treating the diverse problems manifested by these individuals. School systems have varied widely in their approaches to delivering services for the identification and/or treatment of children with reading disorders. Private programs have also experimented with diverse approaches, generally at high cost to the families of those in need of treatment. The situation is further aggravated by a shortage of personnel specifically trained to provide either reading instruction or remediation. Any effort to establish a massive, nationwide program would first require a considerably stepped-up program to train such personnel.

In recent years the Federal Government has made a substantial effort to upgrade the nation's educational system. Despite great potential for general education, this effort has lacked any coordinated focus on the problems of reading disorders. No systematic effort has been made to answer the three questions most crucial to any effective and economically sound national reading program:

(1) What principles and procedures can most reliably be used to identify children with reading disorders?

(2) What principles and procedures can most effectively be used to prevent and remedy such reading disorders?

(3) What procedures can prove most effective and economically sound for the delivery of these services?

A considerable amount of relevant information already exists; and, with an expanded research effort, more will be forthcoming. This information consists of extremely heterogeneous data contributed by many disciplines and derived from basic and applied research as well as from clinical and classroom observations. Much of the data cannot be integrated into a systematic body of knowledge, however, because of differences in definitions of terms, in populations used, or in research design. There are few mechanisms at present whereby the results of research programs, federally or otherwise supported, related to reading disorders are integrated and systematically presented to the professions and to the public. Such mechanisms must be developed.

Immediate and serious attention must be given to the present level of reading and related language skills that prevail among school children and other citizens. School personnel and facilities should constitute the basic vehicle for an approach to these problems. Additionally, the resources of social and health agencies should be utilized to this end. Although we cannot neglect remedial reading programs for those who have failed, the foremost concern of a national program should be the prevention of reading failure.

The Committee's recommendations emphasize the ultimate objective of a total national program: to assure that every child who has the ability will learn to read.

As a first step in the development of a national reading program, the Committee proposes three major components:

(1) An Office on Reading Disorders within the Department of Health, Education, and Welfare, whose responsibility would be the coordination of a national effort in reading research and development;

(2) A network of Operational Reading Research and Development Centers whose responsibilities would be the develop-

ment of specific procedures and programs for the identification and remediation of children with reading disorders and the analysis of the cost/effectiveness of such procedures and programs, and

(3) The implementation of measures to increase the quality and availability of training, and the availability of reading researchers, reading specialists, and reading teachers.

The Committee's specific recommendations are as follows:

I. Creation of an Office on Reading Disorders within an appropriate agency of the Department of Health, Education, and Welfare, whose organization and functions will be as follows:

A. Organization

(1) The Office on Reading Disorders will consist of a Director, Staff, and an Advisory Council appointed by the Secretary of the Department of Health, Education, and Welfare.

(2) The Advisory Council will include the following:

a. Six nongovernmental members, five of whom are specialists in reading or reading-related areas and one of whom is a nonprofessional.

b. Liaison representatives from each of the following:
Bureau of Elementary and Secondary Education;
Bureau of Educational Personnel Development;
Bureau of Education for the Handicapped;

National Institute of Mental Health;

National Institute of Child Health and Human Development;

National Institute of Neurological Diseases and Stroke;

Office of Child Development;

Regional Medical Programs Services (including the Neurological and Sensory Disease Control Program);

Social and Rehabilitation Services;

Department of Defense;

Bureau of Indian Affairs;

Bureau of Prisons;

President's Committee on Mental Retardation;

Interagency Committee on Mexican-American Affairs;

and others, in addition, as the Secretary deems useful.

These representatives, who would be nonvoting, would have responsibilities for consulting with and advising the staff, and they would serve as agents for the dissemination and utilization of the significant findings of the Office when pertinent to their particular agencies.

B. Functions of the Office on Reading Disorders

(1) Define the major questions which must be answered with respect to the following:

a. The nature of the reading process;

b. The evaluation of reading achievement;

c. The factors involved in reading disorders, including the higher incidence of reading disorders among boys;

d. The development of effective procedures for the prediction and analysis of reading disorders;

e. The relative effectiveness of various procedures and materials that may be utilized in the prevention or remediation of reading disorders; and

f. The development of efficient systems for the prevention, early identification, and remediation of reading difficulties.

(2) Establish and supervise a systematic program of research designed to provide answers to these questions.

(3) Collate, evaluate, and integrate knowledge in this field.

(4) Disseminate this information in formats and styles useful to the professions and to the general public.

C. Functions of the Advisory Council

It will be the responsibility of the Advisory Council to conduct a periodic review and evaluation of the programs of the Office on Reading Disorders. Grants and contracts developed by this Office will be reviewed by the Advisory Council, and such grants and contracts will be made contingent on the approval of the Council.

II. Research

Development of 10 to 20 Operational Reading Research and Development Centers whose function is to answer specific questions which must be resolved before the creation of a National Program on Reading Disorders. These Centers can also serve as resources for the training of essential personnel. A network of such Centers would constitute a coordinated program for the systematic development and evaluation of strategies, protocols, and procedures for the prevention and correction of reading disorders in an operational setting.

A. Fundamental features which should govern the establishment of these Centers include:

(1) Relation to diverse geographic, socioeconomic, ethnic, and age groups;

(2) Competitive ability to generate research and to accomplish the needed research as required by the Office;

(3) Proximity to and formal affiliation with cooperating organizations having professional and scientific competence, such as institutions responsible for teacher training and community school programs;

(4) Provision of sufficient, stable, long-term funding for each Center to insure continuity; and

(5) Periodic review of the productivity and efficiency of each Center through a mechanism established by the Office.

B. The Operational Centers, under the monitorship of the Office on Reading Disorders, should engage in a variety of studies and operations designed to develop and test procedures and programs that will:

(1) Identify at the preschool level children who present a high risk of reading disorders;

(2) Evaluate preventive approaches, including preschool remediation of deficits conducive to reading disorders;

(3) Recognize the failing reader early in his school career;

(4) Improve regular classroom instruction for high-risk children;

(5) Provide school remediation of the failing reader and correction of deficits related to reading disorders;

(6) Develop standards of reading achievement and procedures to achieve comparability of reading performance;

The Centers should also:

(7) Establish reading curriculum study groups for both students and student teachers; and

(8) Conduct interdisciplinary workshops for professionals in education and health in order to develop systems for effective delivery of services necessary in remediation of reading disorders.

III. Manpower and Resource Development

A. Certain programs are uniquely the responsibility of the Federal Government; some are the responsibility of the state and local governments and the private sector; others are shared.

B. The Department of Health, Education, and Welfare should:

(1) Review all current programs of the Federal Government related to reading in order to effect greater coordination and integration of these programs. These should be strengthened and extended as necessary to formulate a program plan which will spell out comprehensive objectives for Federal effort in relation to reading and develop a system of program analysis that embraces the scientific and professional elements essential to analyzing the use of public resources for reading improvement.

(2) Provide grant or contract funds to develop model classroom programs to be used as a basis for stimulating research on and evaluation of reading instruction. These classrooms will study procedures, materials, aptitude and achievement measures, conditions for motivation, and teacher behaviors. These classrooms must, in turn, serve as observational models for training teachers in association with a program of teacher preparation.

(3) Maintain continuous evaluation of instructional materials and procedures. Where evaluation through controlled research yields evidence of instructional effectiveness, these materials and procedures should be recommended for publication and wide dissemination. The ERIC System, the Instructional Materials Centers Network, and other existing government resources may provide the framework within which these objectives can be carried out more effectively.

(4) Develop demonstration programs for professional preparation in reading instruction and remediation. These programs and their curricula should incorporate the results of scientific study and involve procedures which have been evaluated scientifically, tested in the classroom, and found effective for reading instruction and remediation.

(5) Provide grant or contract funds for studies to determine the role, effectiveness, and training of volunteer and paraprofessional personnel in the field of reading instruction and remediation.

(6) Provide grant or contract funds for preschool language and other programs that enhance reading development in order to construct and validate instructional procedures and materials to be used by agencies, schools, and parents.

(7) Provide grant or contract funds to construct and validate measures which constitute standards of literacy and reading skills.

(8) Request the Secretary of Labor to conduct studies which will establish the minimum level of reading skills needed for effective performance in benchmark occupations under specified conditions.

(9) Provide grant or contract funds for research on the unique educational needs and vocational possibilities of persons with severe reading disorders.

(10) Provide a focal point for receiving and giving significance to recommendations by concerned professional organizations in the field of reading with respect to standards for reading teachers, clinicians, consultants, and supervisors.

(11) Seek specific appropriations under the authority of the Education Professions Development Act (P.L. 90-35, as amended) to provide fellowships, institutes, and short-term intensive training projects in the prevention and remediation of reading disorders for general classroom teachers, teachers of reading, reading supervisors, reading clinicians, and reading researchers.

(12) Support the conduct of workshops on a national level involving educators and disciplines other than the field of education. These workshops will seek to

determine desirable prerequisites for teaching elementary reading, explore the methods whereby these requisites can best be met, and disseminate the findings of these workshops to institutions concerned with teacher training.

(13) Support the conduct of workshops in the health and education professions involved in diagnosis and treatment of reading disorders. These workshops will be established in consultation with universities and professional organizations concerned with training of personnel. Such workshops will evaluate current practices for exposing personnel in health and education fields to the nature of the reading process and of reading disorders, and they will formulate approaches for extending and improving these practices.

(14) Seek to apply the Federal Government's classification standards for difficult teaching assignments (under the Civil Service Position Classification Plan) to include positions for teaching persons with reading disorders and for teaching reading to children in school grades one and two, and to make adjustments in the qualification standards accordingly. Legislation should be sought which authorizes comparable adjustments in compensation for teachers in Overseas Dependent Schools.

(15) Encourage states and Federal agencies to conduct a review of requirements for certification and teacher training and to consider incentives for special training in reading instruction for first and second grade teachers.

(16) Encourage states to include in the category warranting special training, certification, and incentives the teachers of bilingual children, teachers of children of migrant workers, and teachers of reading in inner city areas.

(17) Encourage public interest in the support of community resources for the prevention, diagnosis, and treatment of reading disorders, development of programs to provide information on sources of professional services, support of professional organizations in expanding services, and provision of a focal point for obtaining and using volunteer services in meeting the needs of persons with reading disorders.

MAGNITUDE OF THE PROBLEM

Despite the efforts of dedicated teachers and ever-increasing expenditures for education, vast numbers of American children are falling behind in school every year. With promotion policies subject to local control and variation, every year from two to ten percent of the children become nonpromotion statistics. The most frequent cause of nonpromotion is reading failure.

The enrollment in the primary and secondary grades of our public schools is 51,500,000. The average cost per child per year is $696. If one child in twenty (5 percent) is not promoted, the national loss expressed in economic terms alone is $1.7 billion.

Yet, these figures do not divulge the actual magnitude of the problem. Many children with severe reading disorders are promoted with their classmates even though they have difficulty keeping up. Many of these children drop out of school and later fail in society.

Various studies available to the Committee lead to the conclusion that reading disorders affect about 15 percent of the children in school today. An exact figure is difficult to determine because of the various ways of defining reading disorders. The judgment has often been made--intuitively or clinically--that if a child is reading at a level a year below his expected grade placement during his second or third year of school, he is significantly retarded in reading. In the third, fourth, or fifth grade, a child is frequently judged to be significantly retarded in reading if he reads at a level

1-1/2 years below his grade placement. While some individual variation is expected in reading performance, a degree of reading retardation far below these cutoff scores handicaps the entire school experience for these children, since learning in most areas depends in large measure on reading. Children of adequate intelligence but retarded in reading often perform adequately in nonreading school work during the early grades. However, as the years of reading failure build up feelings of their own inadequacy and dissatisfaction with school, their overall academic work is severely affected.

The National Center for Health Statistics administered reading tests to a representative sample of 7,000 children between the ages of 6 and 11. The results, analyzed without reference to mental ability, indicated that 25 percent of the eleven-year-olds read at levels two or more years below their grade level (i.e., fifth graders reading at third-grade level or below). Of the ten-year-olds (fourth grade), 16 percent read two years below grade level; of the nine-year-olds (third grade), 12 percent read two years below grade level.

It is also possible to determine the percentage of children in each grade who do not achieve a particular standard. Completion of third grade generally implies mastery of the basic skills and a basic sight vocabulary sufficient to read other subjects, not just to practice and improve reading itself. Reading beyond this primary level is often considered as being "over the hump" in terms of basic skills.

On the basis of the national norms for the Metropolitan Achievement Tests for children who have never repeated a grade, the number of children who have not proceeded beyond the primary level is 15 percent by the end of the fifth grade, 10 percent by the end of the sixth grade, and 5 percent by the end of the seventh grade. Since these percentages represent children who have never repeated a grade, a substantial increase would be produced by including the many children who have been retained by nonpromotion.

The Committee is convinced that the 15 percent figure, based on measurement of reading performance without reference to mental ability, is well beyond the range to be expected on the basis of normal human variability.*

Where studies compute the extent of reading retardation beyond that which is attributable to lack of mental ability, the proportion of children who display reading disorders also appears to be in the 15 percent range.

That the problem is nationwide is indicated by the fact that such studies have come from every part of the country. The findings of some of these studies follow.

Montgomery County, Maryland

This is a predominantly suburban community of approximately 500,000 residents. Of those over 25 years of age, 43 percent have attended college and 29 percent are college graduates. Over two-thirds of the high school graduates seek higher education.

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*See page 40 for a further comment regarding figures on the prevalence of reading disorders.

The public schools of Montgomery County measure underachievement in reading by a comparison of scores on the Lorge-Thorndike Intelligence Test with scores on the Iowa Test of Basic Skills. The verbal standard score on the Lorge Test forms the basis of a mean grade equivalent in reading, which is translated into an expected score in reading.

In 1968 results of this testing program showed that 13.3 percent of the children in this well-supported school system were underachievers in reading.

Rocky Mountain Area

The Rocky Mountain Educational Laboratory in Greeley, Colorado, conducted a Pilot Regional Incidence Study of learning disabilities in 1967. The test population consisted of approximately 2,400 second-grade students selected by stratified random sampling in an eight-state region. Children whose learning problems could be accounted for by mild to severe mental retardation, emotional disturbances, gross neurological dysfunction, and/or severe cultural disadvantages were excluded.

On the basis of the Myklebust learning quotient (comparison of reading grade actually obtained with reading grade expected, on the basis of the average of mental age, life age, and school grade), 14 percent of the children in the sample were found to be underachievers (i.e., learning quotients below 90). Reading disorders were found to "play a large part" in these phenomena.

Appleton, Wisconsin

The Cooperative Educational Service Agency No. 8 of Appleton, Wisconsin, surveyed all third- through sixth-grade children in the seventeen communities it serves. On the basis of normal grade equivalent for chronological age, and according to the Gates-McGinitie Test, third- and fourth-grade children who were one year below expected reading level and fifth- and sixth-grade children who were two years below were subsequently given the WISC IQ Test. Those scoring 80 or higher were considered to be candidates for corrective services. Of the 4,065 children surveyed, 11.8 percent were identified as needing special remediation.

Delaware County, Pennsylvania

During the 1967-68 school year, 36,791 children in grades 2, 4, 6, 8, and 10 were evaluated on the basis of reading ability. Of this group, 6.6 percent were reading between one and two years below their expected level, and an additional 7.5 percent were reading at a level more than two years below the norms. This means that a total of 14.1 percent were retarded readers.

Prince Georges County, Maryland

The National Institute of Mental Health conducted a reading study of 3,651 public school children representing 90 percent of a cohort originally formed in 1954-55 from a countywide sixth-grade population. The retarded readers constituted 14.7 percent of the test group. Of particular significance was the indication that underachievement in reading is an enduring phenomenon. A follow-up study showed that sixth-grade underachievers continued to be underachievers in the ninth grade, and they did not perform as well as normal readers in any school subject. They made lower grade point averages in the later grades, obtained lower scores on objective achievement tests, and failed secondary school grades more often than normal readers. Of the original sixth-grade population, 73 percent were graduated from high school; but among the underachievers in reading, only 68 percent were graduated. Of those graduating from high school, 55 percent pursued additional education; among the underachievers in reading, only 37 percent pursued additional education.

Mid-West Suburban Area

In a suburban area characterized by high-level opportunity, Myklebust tested 932 third- and fourth-grade children. On the basis of his learning quotient technique, with a cutoff point of 89 or lower, Myklebust found that 14.5 percent of the population were underachievers in either reading, spelling, or arithmetic. Further diagnosis involving pediatrics, neurology, electroencephalography, and ophthalmology indicated that in 7.5 percent of the children the deficiencies were attributable to learning disorders, primarily in relation to reading.

Junior College Population

The American Association of Junior Colleges states: "A sizable percentage of our students read at a level far below what we might expect of a high school graduate....We have estimated that from one-third to one-half of our new students, particularly in our urban colleges, need some type of remediation in order to have some reasonable probability of success in degree-level courses. As many as

20 percent of our new students in the most disadvantaged areas are unable to profit from our present remedial programs, so severe is their handicap."

Urban and Disadvantaged Populations

Although there are few adequate incidence studies of reading disorders among urban, nonwhite, bilingual, and disadvantaged populations, some studies, as well as reliable estimates from a variety of sources, indicate that the incidence is higher than 15 percent among these population groups.

In Newark, New Jersey, in 1966, the median reading grade score of children in the third grade was 1.9 while the national norm was 3.2. For grade six the Newark median grade in reading was 4.0, compared with the national norm of 6.2. The median I.Q. of 90 in both the third and sixth grades was below average, and at both grades reading was even poorer than expected on the basis of mental ability. Half of the school population could technically be considered as having reading disorders.

The population of the schools was characterized by high rates of migration to Newark, transfers in and out of schools within the Newark system, high dropout rates, and increasing proportions of non-English speaking pupils. In 1966, the Newark schools could not find adequate numbers of specialists to staff special programs for disadvantaged pupils under Title I of the Federal Elementary and Secondary Education Act. It has been estimated that approximately one-half of the pupils would be functional illiterates upon completion of schooling.

Every year some 700,000 children drop out of public school. The dropout rate varies between sexes and among different ethnic groups. Among Hispanic-Americans, the mean grade level of achievement is 5.4 grade years; approximately 80 percent fail to complete high school. In Tucson, Arizona, 93 percent of all dropouts are Hispanic-American. The dropout rate is greater for black than white children, yet greater for white boys than black girls. In October 1966, the unemployment rate of dropout students was 17.4 percent, compared with a national rate of 4 to 5 percent.

Job Corps has found it necessary to deal with reading ability in trainees. A reading screening test is administered to each trainee upon admittance to Job Corps. An analysis of these test results shows that nearly 60 percent of the enrollees of Job Corps Urban Centers have less than a sixth-grade reading ability. About 20 percent of them read below the third-grade level. At Gary Job Corps Center in San Marcos, Texas, the largest of all of the Urban Centers, approximately 23 percent of all enrollees are reading below the sixth-grade level, even though the average corpsman has completed nine years of public school. Job Corps developed a reading program in 1964 whose objective was to bring each individual trainee to a point where he could achieve eighth-grade reading ability. The reading program is a major part of Job Corps effort to equip trainees for employment. In their experience the ability to read is the most important factor related to performance on the job.

It is also common knowledge that a disproportionate number of educational failures is found among both delinquent youth and criminal adults. The federal Bureau of Prisons reports that according to nonverbal tests the mean I.Q. of inmates is 102, yet the overall educational level is only 7.2 grade years. Studies indicate that 75 percent of juvenile delinquents are significantly retarded in reading. Another indication of national economic loss due to reading disability is the fact that the 1968 cost for detention of a juvenile delinquent in a Federal institution was $6,935 per man year.

In an effort to broaden the manpower base for military service and at the same time assist the disadvantaged, the Department of Defense in 1966 reduced mental standards to accept 100,000 servicemen annually who would have been rejected by previous standards. Of all men enlisted or inducted under the revised requirements, the median reading ability was 6.1 grade years; 31 percent of these men read below the mean for children at the end of the third grade.

Clearly the educational consequences of reading failure are indisputable and critical. The retention of reading underachievers probably costs the nation's public educational system in excess of one billion dollars every year. Unless the causes of failure are determined and specific remedial instruction is provided, a child profits little from repeating the same grade.

There is evidence of growing concern on the part of parents, teachers, and school administrators about the problem. Parents are seeking diagnostic services and remedial education programs. Recognized diagnostic services are not readily available. Those which do exist range from free services in public schools through university-based diagnostic facilities to private facilities charging several hundred dollars.

Public and independent schools are offering an ever-increasing number of remedial programs. Independent schools offering a systematic remediation program for reading disability have average tuitions of $2,100 a year for day school and $4,150 a year for boarding school. In spite of the lack of knowledge that exists, some children have been helped, but the present state of affairs is such that there can be no assurance that a diagnostic study will be accurate nor that the related instruction will be sufficient to meet the child's needs. Unfortunately, today's situation opens the way to exploitation and well-meaning but ineffective effort.

Parents have joined together in common interest, endeavoring to form nationwide organizations to seek guidance and assistance for their children. Reading specialists have formed international organizations in an effort to resolve issues regarding reading instruction and to improve the preparation of teachers. Public school teachers have responded by seeking courses of instruction which would aid them in their efforts to teach children with reading disorders; but their searches often have been frustrated by a lack of available services whose effectiveness has been determined by authoritative research.

During its brief one-year existence, the Secretary's (HEW) National Advisory Committee on Dyslexia and Related Reading Disorders has received over 21,000 inquiries from parents, children, and teachers and other professionals seeking help in dealing with reading failures. Across the nation 8,000,000 similarly affected children are also awaiting help.

NATURE OF THE PROBLEM

The Reading Process

An understanding of the nature of reading disorders depends on an understanding of the reading process itself.

Experts agree that the essential skill in reading consists of extracting the meaning from a printed or written message—in many ways similar to extracting the meaning from a spoken message. Mastering this skill depends upon the attainment of many component skills. Furthermore, even after extracting meaning, the reader should be able to react to that meaning and to evaluate the truth, validity, and significance of the message against past experience and information.

Experts disagree on the precise specification of all of the components of the reading process, but a useful classification can be spelled out as follows:

1. The child must know the language he expects to read. Normally, even before beginning to read, he must have a simple command of the spoken language.* As he progresses, he gains more and more command of the vocabulary and grammar of the language, not only through general experience but through reading itself.

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*Learning to read English is especially difficult for bilingual children because they do not learn to speak English at home before they enter school. Children with a nonstandard dialect also may experience difficulties. The fact that deaf children do not normally acquire spoken language before beginning to read creates special problems for them. These points must be borne in mind in the subsequent discussion.

2. He must dissect spoken words into component sounds in their temporal order.
3. He must recognize and discriminate the letters of the alphabet in their various forms.
4. He must respond to the direction by which words are spelled and put in order in continuous text (left-to-right in English and many languages).
5. He must respond to the patterns of highly probable correspondence between letters and sounds. And he must learn those patterns of correspondence that will help him to recognize familiar words from his spoken language or that will help him to determine the pronunciation of unfamiliar words.
6. He must recognize printed words from whatever cues he can use--their total configuration, the letters composing them, the sounds represented by those letters, and/or the meaning suggested by the context.
7. The child must learn that printed words signal spoken words and that they have meanings analogous to those of spoken words. While "decoding" a printed message into its spoken equivalent, the child must be able to apprehend the meaning of the total message in about the same way that he would apprehend the meaning of the corresponding spoken message.
8. The child must learn to reason and to think about what he reads, within the limits of his talent and experience.

Differing Views of Teaching Reading

It is well known that there have been differing views about the way in which reading should be taught. The differences hinge mainly on the order in which the various component skills should be taught. Some believe that the early emphasis should be placed on extracting the meaning from print; others hold that early emphasis should be placed on the "decoding" of print into sound via letter-sound relations.

The Committee would like to stress that procedures differ in effectiveness from child to child. In helping the disabled child, it is essential first to determine which skills cause the most difficulty and then to apply techniques that will best remedy those deficits.

Reading Disorders

The complexity of the reading process dictates that children who have difficulty learning to read will exhibit a great diversity of symptoms. Some find problems in discriminating letters of the alphabet or with the sequence of letters in a word; some fail to relate letters and words to spoken sounds; some have difficulty in comprehending the structure and meaning of words, sentences, or paragraphs.

Various disciplines have reached no agreement on an adequate description of the different aspects of reading disorders. Some writers emphasize particular symptoms, such as the confusion of letters (e.g., *b* and *d*) or of words (such as *saw* and *was*). They attempt to identify groups of children on the basis of specific symptoms and to classify them as children with "strephosymbolia" or with "perceptual disorders" or with "difficulty in auditory sequencing."

Disagreement persists concerning the variety of difficulties exhibited by children with reading disorders and the terms to be used to describe these diverse symptoms, just as controversy persists with regard to the causes of these disorders. They have been attributed to genetic factors, to "developmental lag," to "minimal brain dysfunction," to "lack of neurosensory integration," to emotional maladjustment, ego deficiencies, poor instructional methods, and to a variety of other factors.

These differences of opinion concerning the symptomatology and etiology of reading disorders have led to a multiplicity of systems of classification of reading disorders, many of which present a logically inconsistent and confusing combination of symptomatic and etiologic criteria. Classifications offered for reading disorders appear to fall into four categories: functional, etiologic, theoretical, and nosological. Functional classifications seek to group reading disorders by overt symptoms of reading behavior. Etiologic classifications emphasize the presumed causes of reading disorders. Theoretical classifications are those based on hypothesized models of psychological functioning. Nosological classifications assume that some reading disorders are analogous to disease entities with a particular syndrome of symptoms and etiology.

All of these classification systems reflect the bias of the professional discipline from which they emanate. Often the reading disorders exhibited by individual children do not follow any typical pattern; the symptoms and causative factors that may be identified in a given case may be so diverse as to make it difficult and perhaps useless to assign a particular classification to that case.

Definitions of "Dyslexia"

Marked differences exist within the scientific and professional community on the meaning of the term "dyslexia." Some writers apply the term "dyslexia" to children who show one or another group of symptoms, but disagree among themselves concerning which symptoms define the "dyslexic" child. Some maintain that a group of children may be identified who show a characteristic pattern of symptoms (or a "syndrome") and use the term "dyslexia" to refer to such a pattern, although there are few research data to support the contention that consistent patterns do occur.

Some definitions are based on presence of deficiency in reading:

> Dyslexia means defective reading.
>
> (Reading Disability, Ed. John Money, "Dyslexia: A Postconference Review," John Money, p. 1, The Johns Hopkins Press, 1962)

Other definitions emphasize differences in contributing factors:

> Dyslexia: an inability to read understandingly due to a central lesion.
>
> (Dorland's Illustrated Medical Dictionary, 23rd Edition, W. B. Saunders Co., Phila., 1957, p. 419)

The World Federation of Neurology assumes a general group of dyslectics and a specific form of dyslexia as follows:

> Dyslexia: A disorder in children, who, despite conventional classroom experience, fail to attain the language skills of reading, writing, and spelling commensurate with their intellectual abilities.
>
> (World Federation of Neurology, Research Group on Developmental Dyslexia and World Illiteracy, April 3-4-5, 1968)
>
> Specific Developmental Dyslexia: A disorder manifested by difficulty in learning to read despite conventional instruction, adequate intelligence, and socio-cultural opportunity. It is dependent upon fundamental cognitive disabilities which are frequently of constitutional origin.
>
> (World Federation of Neurology, Research Group on Developmental Dyslexia and World Illiteracy, April 3-4-5, 1968)

This diversity of the problems and approaches has resulted in disagreement regarding the meaning of "dyslexia." By its derivation, the term "dyslexia" simply means disorder of reading. There has been a widely held view that of the disabled readers there are some with a rather stereotyped group of symptoms whose innate characteristics interfere with learning to read. The definition of the World Federation of Neurology for specific developmental dyslexia is an example of this point of view.

However, there are many who doubt the existence of such a clear-cut group of disorders, or who question their exclusively constitutional origin, who point to the diversity of symptoms and functional deficits to be observed and to the broad spectrum and range of disorders. To them, it seems inappropriate to select any single subgroup for this specific designation.

In view of these wide divergences of opinion, the Committee believes that the use of the term "dyslexia" serves no useful purpose.

This confusion will persist until certain basic questions can be answered:

(1) How shall reading disorders be defined?

(2) What constitute adequate procedures for description and measurement of the various aspects of reading disorders?

(3) How do family history, neurological or visual dysfunction, laterality, emotionality, etc., specifically relate to the various symptoms of reading disorders?

(4) What relationship, if any, do the various symptomatic and etiologic factors have to the efficacy of procedures of instruction and remediation?

Research on the Nature of the Reading Process

Basic research on the nature of the reading process ultimately can answer such questions. A better understanding of this process, both in individuals who exhibit difficulty in reading and in those who do not, will aid in the development of better procedures of diagnosis, instruction, and remediation.

Even before 1900, psychologists and educators in various countries (particularly Germany and the United States) did fundamental research on the nature of perceptual processes in reading. The first half of the 20th Century, however, saw little follow-up and refinement of this earlier work. Renewed interest in basic reading research has emerged only in the last decade. The work of Project Literacy, supported under the Cooperative Research Act, charted new directions and began to yield significant and useful findings on the components of reading skill. For example, much has been discovered about the sound-letter relationships learned and utilized in reading and about how children learn to understand the meaning of sentences and paragraphs. This type of research needs further development, however. Using the "Convergence Technique," a group sponsored by Phi Delta Kappa and the U. S. Office of Education has been attempting to identify specific research questions.

Among the crucial research problems in reading are those of defining reading behavior more precisely and taking into account all of the conditions which are present during reading. There is a need for studies which focus on the observable responses that are important to basic skill development. The ways in which reinforcing variables, available to the teacher in the classroom, may be used to motivate reading performance should be investigated. In addition, emphasis should be placed upon measuring the effects of other conditions, including environmental and biological ones, upon performance in reading. Research in reading must include studies which pinpoint three components of reading: reading cues, reading responses, and conditions which motivate performance.

Research on Testing and Evaluation

Much of the confusion in reading stems from tests of reading progress and achievement which do not readily yield appraisals of exactly which skills in reading a given child has achieved or failed to achieve. For example, a standardized group reading achievement test might indicate that a child in the fourth grade is reading at the "second-grade level." This does not reveal the nature of his deficiency. It might be any one or more of a number of things: a failure to "decode" words properly, a deficiency in basic vocabulary, a failure to comprehend meaning, or a failure to draw correct inferences from the material he reads. Even some of the tests designed to be "diagnostic" leave much to be desired in adequately pinpointing deficiencies.

The diversity of available reading tests and a lack of agreed-upon levels of reading skill leave a considerable number of questions unanswered about the meaning of the statistics that have been assembled concerning the prevalence of reading disorders. This Committee has introduced this report with a figure of 15 percent, representing the approximate proportion of the school population which exhibits reading difficulties. This figure emerges from surveys using general reading achievement tests normed in terms of grade levels. Such tests can give some basis for estimating an overall degree of disorder, but do not indicate its nature. Some tests may actually give very inaccurate estimates of the degree of disorder by measuring general intelligence instead of reading skill per se.

Standard Measures of Reading Skills

In recent years, measurement specialists and learning theorists have been recommending the development of "criterion-referenced tests." They will indicate more precisely the specific skills achieved at various levels of progress in a given domain of the school curriculum. This concept needs to be applied in the reading field through the development of methods of measurement that will supplement or even replace existing tests.

Instruments must be devised that will evaluate the reading skills a child has acquired and indicate those he still has to learn. These instruments could have a profound effect on the teaching and learning process by accomplishing the following:

(1) Providing information to the teacher on the amount and kind of learning occurring during a given calendar unit and influencing her selection of procedures and materials;

(2) Informing the child himself about what he has or has not learned and encouraging greater responsibility for his own learning;

(3) Making particular deficiencies within individuals more readily apparent for prompt application of remedial measures;

(4) Encouraging children, teachers, and schools to evaluate

the actual amount of learning (in terms of skills acquired) that has taken place during a calendar unit rather than comparing progress with a presumed "norm;"

(5) Evaluating instructional materials in terms of their relevance to the instructional goals represented by the tests and in terms of their effectiveness in facilitating achievement of those goals.

Research on Etiology

Much useful information has emerged from studies on the etiology of reading disorders. Yet, too often this information is fragmentary or inadequately supported by the available evidence. Certainly there exists nothing like a complete picture of the relationship of various causative factors to specific aspects of reading disorders.

Deficiencies of many of the previous studies of etiology include poor research design, inadequate measuring and diagnostic instruments, overemphasis on single causes to the exclusion of other possible causative factors, failure to study cases longitudinally, inappropriate selection of samples for study, failure to compare normal children with disorder groups, and failure to link causative factors with specific types of disorders. Such deficiencies stem partly from a lack of sufficient financial support of research and partly from inadequacies in the knowledge and training of the investigators.

Better coordination of efforts, better timing of investigation, more use of the latest findings in medicine, psychology, linguistics,

and other related disciplines, and appropriate financial backing for research efforts—all these will help enormously in clarifying the etiologic picture.

Thus, the nature of the reading problem has vitally influenced the Committee's recommendations concerning research and teacher training. Taken together with available measures of the magnitude of the problem, this exploration of its nature required a careful review of existing programs, especially those of the Federal Government. This review is presented in the next section of the report.

REVIEW OF EXISTING PROGRAMS AND RESOURCES

The Committee undertook to review existing facilities and resources for the remediation of reading disorders and found that there is no national program per se in this field. Current efforts are diverse and uneven, and their theoretical and scientific basis is uncertain.

Looking at the efforts being made in various communities across the nation, the Committee directed its attention to two factors in these programs.

The first factor considered was the organizational structure or "strategy" of instruction. The Committee considered, for example, whether instruction was given in the context of the regular classroom or by a personal tutor; whether identification of the reading disorder is attempted on a predictive basis or only after reading failure has been manifested in the classroom.

The second factor reviewed by the Committee concerned specific procedures of remediation employed. This included procedures involving modified teaching techniques, special teaching aids, physical exercises, drugs, and others.

Since the essential element in remediation is the teacher, the Committee also directed its attention to the crucial shortage of persons adequately trained to instruct the failing reader. Such a shortage constitutes one of the most serious obstacles to be overcome if the existing situation is to be improved.

Finally, the Committee reviewed the existing Federal programs which are relevant to "dyslexia" and related reading disorders. While the current Federal effort is vast, it is diffused and ill-defined, lacking any central direction in relation to reading disorders.

Current Practices

The number and diversity of the efforts being made to deal with the failing reader are, in many ways, impressive: varying schools and communities across the nation are using a variety of approaches to the problem. There are many reasons for this diversity. In part, it stems from the basic philosophy underlying public education in America, whereby school boards or even the individual principal may enjoy considerable autonomy and authority for a school's programs. Also significant are the wide differences among resources available to education; and the lack of trained personnel, especially in concentrated urban areas. Particularly important is the absence of scientific knowledge upon which to base many of the crucial administrative decisions necessary to the establishment of a sound program.

In order to be able to analyze these diverse activities, it was first necessary to consider the theoretical approaches that might be taken in an effort to eliminate reading failure. They fall into two general categories:

(1) Improvement of regular classroom instruction so that no child will fail; or

(2) Development of supplementary programs whereby the potential or actual failing reader can be recognized at the earliest possible moment and be given appropriate remedial assistance.

When the prevailing situation is observed, it becomes immediately apparent that both types of effort are required. Ideally, regular classroom instruction should be of a quality to insure that no child fails, thus rendering supplementary programs unnecessary. However, the fact is that some 15 percent of all children today are failing readers. Each school system is thus presented with the problem of handling a large proportion of its students who are already, or about to be, slipping from the mainstream of the educational process. Today, in some communities, special programs do exist within the regular school system; in others, community agencies are contributing to diagnosis and remediation. Where parents can afford the considerable expense, they may turn to private agencies for special assistance. These sources may not prove to be reliable.

The Committee concluded that it could not effectively evaluate either the strategies or the procedures being used for children with reading disorders. Such an evaluation, directed to a broad spectrum of programs, would require scientifically controlled study. Each specific population of children would need to be provided with its own well-defined remedial program, which would need to be amenable to measurement by an accurate standard of achievement.

Strategies Employed

In general, programs for reading disorders may be divided into two general categories:

(1) Those directed toward the preschool child and designed to prevent reading failure, and

(2) Those directed toward the school-age child

  a. To prevent reading failure through improvement of beginning reading instruction, and

  b. For the child who is already failing and designed to correct his failure.

Preschool Programs

Of the preschool prevention programs, the most familiar are the Head Start Programs designed to improve the school readiness of entire population groups. Since there is a very high frequency of reading failure among underprivileged populations, massive intervention has been attempted. Results so far indicate that such programs can be helpful if they are administered for periods up to a year before school admission and especially if they are followed by adequate school programs.

A more sharply focused approach has involved the use of preschool screening tests in order to determine which children are likely to fail, supplemented by special preschool preparation for the children so identified. Where this procedure has been adopted, it apparently has made a positive contribution toward reducing the frequency of school failure; but controlled studies to document this thesis are not available.

In-School Programs

Some schools have developed programs for the teaching of beginning reading that attempt to prevent reading failure at its source. They try to give instruction that is adapted to the learning rates of individual children or that teaches the various skills in a careful sequence and with proper motivational controls to prevent any child from becoming a serious failure. These programs are highly promising, but their success has not yet been adequately documented.

The most prevalent program, however, is that which is brought to bear only after a child has shown evidence of failure to learn to read in the school setting. The degree of intervention varies from simple consultation with the regular classroom teacher of the child affected, on the one hand, to special classes or even special schools for children with reading disorders, on the other. Some schools have established procedures by means of which the failing child is identified early in his school career; some also have special diagnostic programs that offer thorough medical, mental, and psychological evaluation of the child. It must be admitted, however, that most schools in this country have no systematic program for early identification of the failing reader, and many have no organized structure for providing special assistance to those who are failing.

Procedures Employed at the Preschool Level

At the preschool level, controversy exists regarding the best procedures for the prevention of possible reading failure. Prevailing preschool planning attempts to help the child develop an awareness of the world around him, to build confidence in himself and in his ability to cope with that world. Accordingly, activities emphasizing language development, time and space orientation, visual and auditory perceptions, and many other skills are an integral part of the preschool program. Adequate development of awareness, self-confidence, and skills is considered to be fundamental to future reading success. School systems differ in the emphasis placed on various facets of this program; and no broad-scale comparative evaluation of the effectiveness of each of the various preschool program components has yet to materialize.

Other procedures currently in use range from physical training (based on the thesis that purposeful body movement must be achieved before more complex learning skills can be mastered) to intensified, specific instruction directed toward mastery of language and learning skills. Unquestionably, training can change performance. Which kinds of training have significant impact on reading readiness, and for which child, remains unproven. In general, it is accepted that relevancy to the ultimate reading task is an essential element.

Procedures Employed at School-Age Level

For the school-age child there is an even greater diversity of approach and controversy regarding the best procedures for remediation of indicated reading failure.

Prevailing remedial instructional methods are based upon the developmental concept, which builds up a sequence of reading skills of increasing complexity as the child progresses through the grades. A sampling of these skills in the early grades includes letter and whole-word identification, word analysis, and content comprehension and interpretation. There are many others. Identification of deficient skills and deficient techniques for learning in the child is followed by use of teaching procedures specifically designed to help the child overcome his difficulties in both areas.

Diversity occurs in determining how this remediation is best accomplished. Many approaches to teaching reading, reintroduced and reemphasized, have been adopted for remedial use with some success. Some involve the utilization of special teaching aids such as audio-visual devices and teaching machines. Some emphasize the study of language and word structure, entailing drills in the recognition and decoding of individual words and letters without the aid of mechanical devices. Some utilize additional tactile-kinesthetic training.

Another controversy relates to the methods of delivering instruction to the child. Some educators consider individualized tutoring or instruction in small groups as essential. Others believe that with special techniques of motivation and programmed instruction, even the severely affected can be taught to read within the regular classroom.

Some methods of remediation are based on the assumption that certain underlying physical deficits must be corrected before the child can learn to read. Even though adequate scientific and empirical evidence of their value for reading is lacking, all of the following are being attempted in some schools: exercises in creeping and crawling, trampoline, teeter-bar, and other physical games and exercises.

Many children with reading disorders exhibit difficulty in form perception and directional orientation skills. On this basis, some training programs have been directed toward the remediation of "perceptuo-motor" deficits on the assumption that improvement here will assist reading. Such procedures may have some value. The best available scientific and empirical evidence indicates that reading is essentially an educational process, with emphasis on the reading task itself and associated language skills providing the most direct and effective route to learning.

Reference should also be made to certain aids in learning. For some unusually hyperactive children--especially those in whom there is an indication of actual brain injury or disease--regulatory drugs may reduce restlessness and tension and make it easier for the child to address himself to the learning task. For children afflicted with significant emotional problems, special guidance may also be necessary since emotional problems can interfere with learning.

Conversely, the child who is already failing in school may develop emotional problems as a direct result. In either event, and especially where family tensions are evident, counseling of both the child and his parents may be an essential adjunct to the educational process.

This account does little more than touch upon the vast multitude of strategies and procedures being employed. The problem is, to be sure, far more complex; and as large commercial interests have become involved, an even larger variety of teaching methods and teaching programs are being recommended and promoted vigorously by their sponsors. For the superintendent of schools, who must recommend the teaching materials to be used, and for the school board which must approve them, the problem is indeed a difficult one. There are no agreed-upon standards against which these various methods and programs have been evaluated. The choice of procedures and materials appears to be almost entirely a matter of local judgment, making it most difficult to determine on what basis such judgments are made.

Teacher Training

A lack of consistency in the training of reading teachers, or more likely a lack of emphasis on reading and reading disorders within the curricula of the various teachers colleges and universities, is reflected by the inconsistency among school programs designed for children with reading disorders. It is disturbing that, at best, the curricula of most teachers' colleges require only three-credit-hours in a separate reading course, in many instances subsuming reading within a single general language arts course. Many teacher candidates graduate from teachers colleges without ever having had experience in teaching reading. It is also disturbing that less than one-third of the states require a separate reading course for teachers receiving certification at the general elementary level. Only a very small minority of teacher-training candidates have had courses dealing with reading disorders. When one considers that learning to read is one of the most crucial hurdles of the first three grades of school, it would seem that teachers of these grades should be specially prepared in this field; actually, the reverse appears to be the case. While older and more experienced teachers tend to shun the turmoil of the lower grades, the assignments fall more often to the new, young teachers, possibly on the assumption that enthusiasm and vitality may compensate for lack of experience.

That trained remedial-reading teachers are in short supply is reflected in the fact that only about two-thirds of the states have any special certification for reading specialists. There seem to be no available statistics that even provide an estimate of the number of teachers being trained or now functioning as remedial reading teachers in the 21,000 school districts of the United States.

It is surely doubtful that there can be either an improvement in the quality of regular classroom instruction in reading or an expansion of special remedial programs for failing readers until more trained teachers are available.

Federal Programs on Reading and Reading Disorders

Programs dealing with reading are included in various activities of the Department of Health, Education, and Welfare and of other agencies of the Federal Government. Research related to reading is supported mainly by the Office of Education, the National Institutes of Health, and the Neurological and Sensory Disease Control Program of the Public Health Service.

Instructional programs which include the teaching of reading are funded through state and local agencies under Title I of the Elementary and Secondary Education Act (children from low income families); Title III, Supplementary Educational Centers and Services; Title VI, Education of Handicapped Children; Title VII, the Bilingual Education Act; and the Adult Education Act of 1966.

Other instructional programs in reading are operated by various agencies of the Federal Government to teach children and adults.

Research

Research in the reading field has been identified as poor in quality and noncumulative. This has been attributed to inadequate training of researchers, a relatively low priority for the production of research among individuals in the reading field, and an isolation of reading researchers from related disciplines. In addition, lack of availability of adequate funds specifically allocated for reading research has hampered improvement of the level of such research. However, certain federally supported projects have been aimed toward increasing productive research in the reading field.

Within the National Institute of Child Health and Human Development (NICHD) and the National Institute of Neurological Diseases and Stroke (NINDS), research is being supported with respect to the fundamental neurological and psychological processes related to reading. Currently active are 180 projects totaling $7.8 million.

Of these, only seven, with an expenditure of $180,962, appear to be focused exclusively on reading.

During the years from 1957 to 1968, the Office of Education under the Cooperative Research Act has supported 257 projects related to reading, with an expenditure of $11.9 million. Under Title VI-B of the Elementary and Secondary Education Act, provisions have been made to establish regional resource centers to develop and apply the best methods for appraising the special educational needs of the handicapped and to assist agencies in providing programs.

Certain activities are of special significance. Within the Bureau of Research, the Office of Education has established fifteen Regional Educational Laboratories, each concentrating on specific areas in the development of educational alternatives, materials, and practices for the schools. Of these laboratories, ten have reading-related projects involving both strategies and procedures for improving reading instruction, either at the individual or community level. Their widely divergent program interests include the following:

1. "To develop a model of individualized instruction" (to field test and further develop a system of individually prescribed instruction).
2. "To improve educational practice in northern metropolitan school systems through programs that insure literacy in the early grades;"
3. "To develop programs in which the teachers' activities are structured to meet the unique needs of Mexican-Americans,

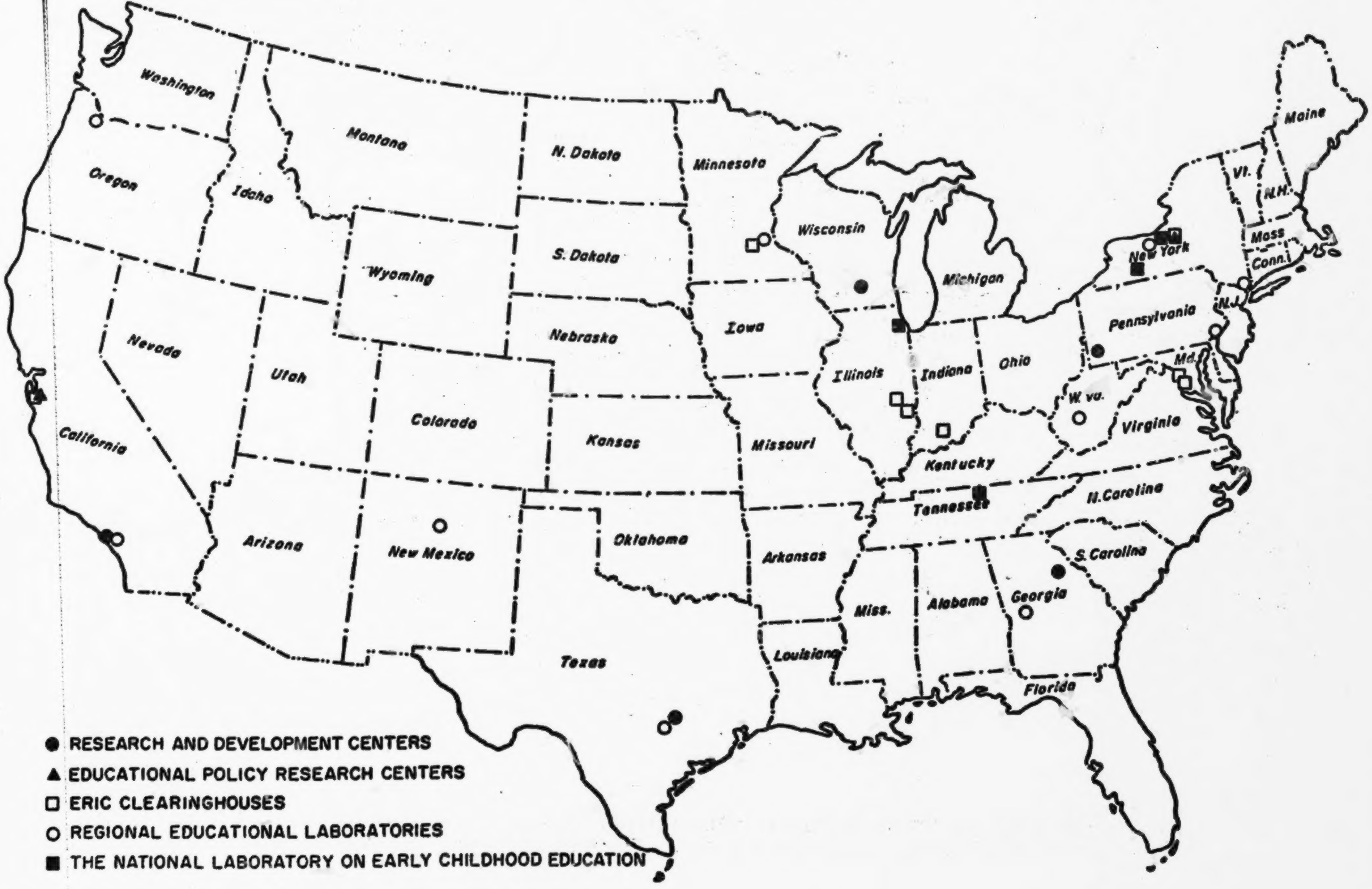
Negroes, and French Acadians;"

4. "To develop new methods of teacher training."

This agency is also supporting 11 research and development centers of which five are engaged in reading-related research through a cooperative research program. These centers are interdisciplinary in organization, and they maintain cooperative relationships with regional laboratories, state departments of education, local school systems, universities and teaching colleges, and relevant professional and nonprofit organizations.

Of particular significance is the National Laboratory on Early Childhood Education, established in 1966 under Title IV, Public Law 89-10, the Elementary and Secondary Education Act of 1965. Within this laboratory, five university-based research centers are developing an integrated program of research. An additional unit, the coordinating center, also university-based, provides the overall scientific direction of the laboratory. One of its first duties was to submit a comprehensive proposal combining sections prepared by the research and development centers, and then to act as a subcontracting agency by allocating funds to other institutions once the master proposal was approved in Washington. In addition, it is the major task of the coordinating center to coordinate the work of this nationwide system by encouraging the replication of data, by pooling data, etc. An ERIC Center Clearinghouse on Early Childhood Education is situated on the campus of the coordinating center.

PRINCIPAL FEDERALLY SUPPORTED RESEARCH RESOURCES AT WHICH READING RELATED RESEARCH IS IN PROGRESS MAY 1969


● RESEARCH AND DEVELOPMENT CENTERS
▲ EDUCATIONAL POLICY RESEARCH CENTERS
□ ERIC CLEARINGHOUSES
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■ THE NATIONAL LABORATORY ON EARLY CHILDHOOD EDUCATION
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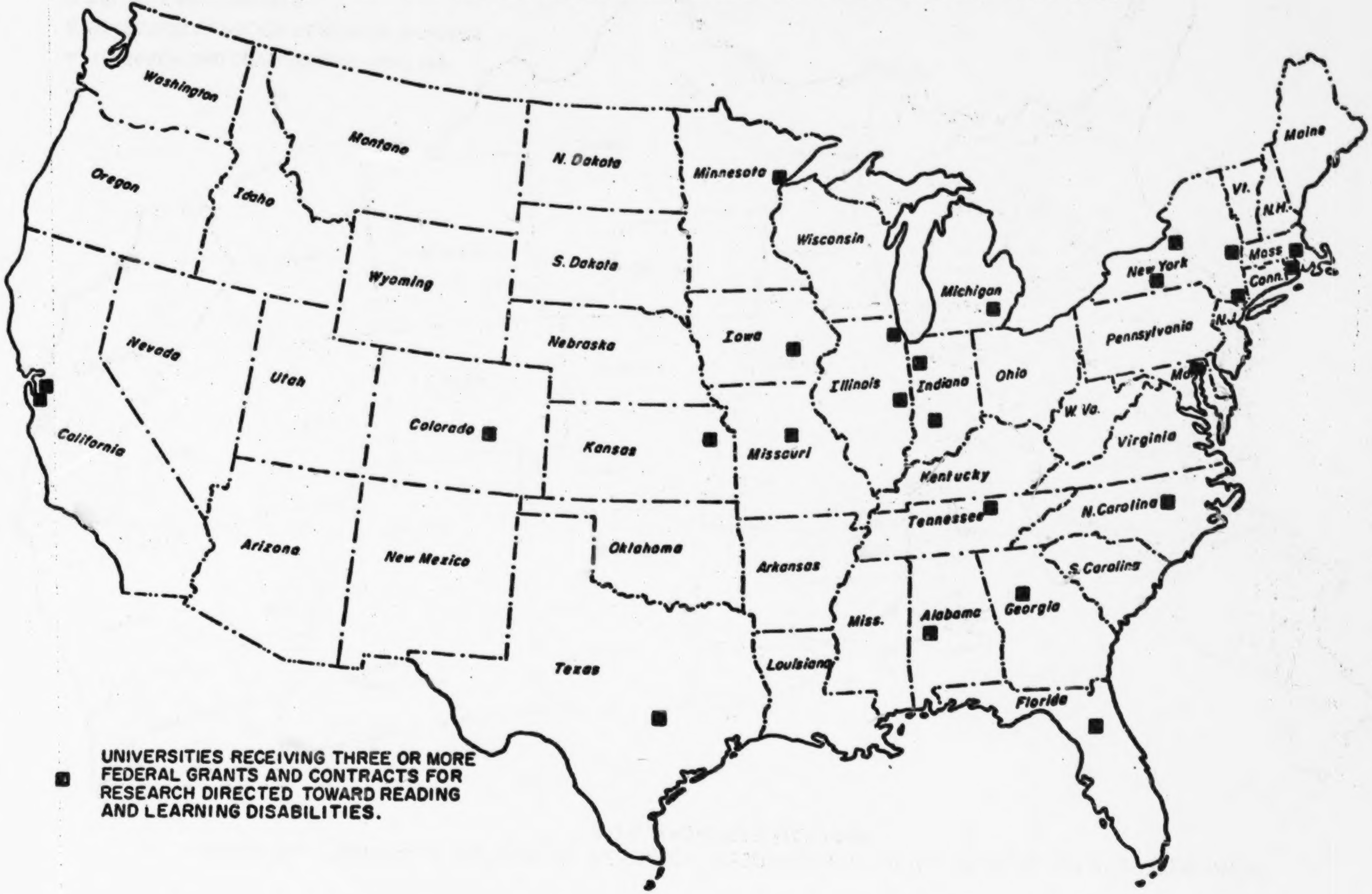
LOCATIONS OF UNIVERSITIES WITH MAJOR FEDERALLY SUPPORTED RESEARCH ON READING AND LEARNING DISABILITIES IN PROGRESS AS OF MAY 1969


Washington
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■ UNIVERSITIES RECEIVING THREE OR MORE FEDERAL GRANTS AND CONTRACTS FOR RESEARCH DIRECTED TOWARD READING AND LEARNING DISABILITIES.

The overall objectives of this laboratory, established upon the recommendation of a task force to the Office of Education's Research Advisory Council, relate to the learning processes of young children, methods of instruction, training of personnel, and dissemination of findings. This enlightened and imaginative program offers a valuable model for the development of a coordinated program of research and development.

Training

The training program for reading conducted by the Office of Education under the Education Professions Development Act includes both fellowships and reading institutes. The fellowship program covers programs for developmental reading, clinical teaching, and reading research. Currently, in the institute program, 608 participants are being trained for developmental reading, 40 of whom are being prepared for clinical teaching. Of 88 persons in the fellowship program, about 30 are being directed toward clinical teaching. Because of cuts in funding, the total developmental training program is about half the size it was a year ago.

The Bureau of Educational Personnel Development, Office of Education, reports an expenditure of $4.3 million for training grants and $4.3 million for fellowships and traineeships during 1969. These monies cover all areas of education and subject matter fields, including reading. Included therein is $1 million allocated through the Bureau of Education for the Handicapped under P.L. 85-926, as amended, to fellowships in the area of learning disorders at the doctoral, masters, and undergraduate levels.

The Education Professions Development Act provides for some training programs for teachers and supervisors. Few have focused on remedial reading.

During FY '68, forty-one short-term institute reading programs were funded under the now expired Title XI of the National Defense Education Act, as amended. Of these, 24 were general and two were classified as remedial. Approximately 1,600 persons were enrolled, and the cost was approximately $1,900,000. Six fellowship programs with enrollment of 130 persons and costing approximately $1,100,000 were also provided.

The categorical description of the reading programs as published in the 1968-69 Announcement of Institute Programs for Advanced Study states:

> General reading institutes are designed to improve the broad range of competencies a teacher, supervisor, or administrator should possess. Usually the programs are concerned with the principles of learning involved in teaching reading, instructional and organizational approaches to reading, the relationship between linguistics and the reading act, and the materials appropriate to the teaching of reading within the total language arts program. Some institutes may emphasize such topics as children's literature, reading in the content areas, reading for disadvantaged youth, or remedial reading.

The total EPDA budget for fellowships and institutes for FY '69 is $80 million. The currently anticipated FY '70 budget is the same, but continuation of long-term projects will leave relatively little money for newer priorities and for new ventures under old priorities. Reading per se will compete with all other subject fields for a share of a tacitly allocated $13 million. While reading may be the subject of focus of some programs under other priorities, such as early childhood education and special education for general classroom teachers, there will probably be less money for reading programs in FY '70 than there was in FY '69. Under current legislation, the chances for programs dealing primarily with reading problems are almost nil.

Federally Supported Instructional Programs

Title I of the Elementary and Secondary Education Act of 1965 has concentrated sharply increased resources on the educational problems of disadvantaged children. Since FY '68 more than $1 billion annually has been allocated to "provide financial assistance to local educational agencies serving areas with concentrations of children with low-income families in order to expand and improve their educational programs by various means." By the 1967-68 school year, well over two-thirds of the school districts in the nation eligible for Title I funds had launched participating programs.

In FY '69, a total of $1.123 billion was allocated for Title I projects among disadvantaged children. Of that total, $4.9 million was earmarked for direct instructional services through local educational agencies. School administrators chose to spend nearly half--or $2.4 million--on improved instruction in Reading-English.

Under Title I, various instructional procedures in overcoming reading disorders have been used. Reading and language skill centers have been established within school systems to provide assistance. Clinical diagnostic and remedial services have been created to assist pupils to overcome reading disorders associated with behavioral and emotional problems. Many Title I programs have concentrated reading instruction on children with Mexican-American, Indian, and Puerto Rican backgrounds.

In the view of the Committee on Labor and Public Welfare of the U. S. Senate, these programs "have had the largest impact on reading instruction of any current efforts."

The impact of these Title I programs has been directed toward children of low-income families. Nevertheless, reading disorders affect one child in seven even in well-supported school systems. The need for research on the reading process and on reading disorders is regarded as essential to the improvement of reading of children in all income groups.

The Adult Education Branch administers programs operated by local schools and community agencies to meet the educational needs of 24 million adults whose inability to speak, read, or write the English language constitutes a substantial impairment of their ability to obtain or retain employment commensurate with their ability. Teacher-training institutes and special experimental and demonstration projects develop and disseminate advanced methods and curriculum materials.

Under Title III of the ESEA, from October 1965 to date, 258 projects have been funded in the area of reading, of which 68 are still in operation.

These projects were established in all but 12 states, and they ranged from as low as one per state to as many as 12 per state in the case of South Carolina. The 68 still in operation were funded in FY '68 at a level of approximately $11 million. The projects are generally funded for a period not to exceed three years. Most of the projects are of the remedial reading type involving diagnostic services, clinics, reading centers, remedial laboratories, and mobile operations. Six mobile units provide remedial reading services to children in rural areas.

Also under Title III, three projects were funded on problems relating to "dyslexia"; one in Texas, one in Mississippi, and one in Massachusetts. Each of the projects includes an in-service training component as well as intensive diagnostic services utilizing the physician, psychologists, language specialists, and other consultants as needed. The Massachusetts project involves prekindergarten and kindergarten children with "dyslexic" problems. It uses a transitional feature to ease the shift from the preprimary level to grade one.

Many of the projects involved the cooperating services of nearby colleges and universities. Several entailed the use of special institutes developed for training administrative and teaching staff.

Title VI-A of the ESEA provides for assistance to states in initiating, expanding, and improving special educational services to handicapped children from preschool through secondary levels. One category of handicapped children, "other health impaired," includes children with learning disorders.

In FY '68, $1.8 million was spent on "other health impaired" children. A survey indicates that most local agencies use the funds to identify, diagnose, and develop programs for children with learning disorders. Some developed procedures for therapeutic educational practices and for prescriptive teaching, including reading readiness or remedial reading activities.

P.L. 89-313, which provides aid to states for children in state-supported schools, expended $24.7 million during FY '68 on 104,000 handicapped children. Sixty-three projects, or 48 percent of the projects studied, were devoted to improving the language arts program.

The Rehabilitation Services Administration of the Department of Health, Education, and Welfare underwrites expenses for remedial reading services for cases in which reading retardation is a primary vocational handicap. Eligibility for this assistance is predicated on the causative disability from which the reading problem arises rather than solely on the existence of a significant reading deficiency.

Federally Operated Instructional Programs

The U.S. Government itself has direct responsibility for the teaching of a significant portion of the population.

The Bureau of Indian Affairs operates schools for 56,000 children, a number which does not include Indian children who are enrolled in mission and public schools.

The Department of Defense, through its Overseas Dependent Schools, provides instruction for 165,000 children of military personnel. Under the Impacted Aid Program of the Office of Education, another 42,000 children receive education in schools on military installations. In the Department of Defense, improvements have taken the form of increased support for direct services to children. Since early in 1968, the Overseas Dependent School Program has provided one reading improvement teacher for every 25 pupils who require such services, plus one such teacher in each school at the secondary level.

The Armed Forces currently provide literacy training for those servicemen admitted under reduced mental standards (Project 100,000) and for men having difficulty completing basic training because of reading problems. The Army selected 5,896 men with reading scores below the fifth grade level to receive instruction sufficient to bring their reading ability to the fifth grade level. Preliminary results indicate that 81 percent of the men achieved this level within a period of six weeks or less. Scores indicate that 33 percent of this group gained at least three years in reading ability.

Gains made in reading achievement by airmen in a similar literacy training program conducted by the Air Force amounted to approximately 1.5 grades per 200 hours of instruction.

The Manpower Programs of the Department of Labor have authority and resources under the Manpower Acts to provide reading instruction for the undereducated and also to provide health services for persons who may require them to become employable. This includes attention to and treatment of reading disorders identified as "dyslexia." The key requirement is that this training must be part of a total program aimed at preparing a manpower program enrollee for employment. The Department of Labor has found that basic education (reading, writing, mathematics) is needed by from one-third to one-half of the enrollees prior to or concurrent with skill training. At the end of FY '69 the Manpower Administration program had spent $287 million, benefiting 135,000 enrollees.

The federal Bureau of Prisons, with 20,000 inmates, conducts mandatory reading classes for 3,500 inmates who read below the fifth grade level. Of the 20,000, one-half are less than 26 years old. Ninety-six percent of these younger offenders dropped out of school before completing high school, and 90 percent of them have reading problems. These inmates have the opportunity to pursue formal education, including reading and arithmetic, as needed. Inmates over 26 years old have access to an informal educational program designed to meet such daily needs as reading the newspaper and personal correspondence. There are learning centers in each institution where self-instructional materials are widely used. Emphasis is directed toward the development of vocabularies appropriate for various industries and compatible with standard English. Future plans include the employment of part-time reading specialists and the provision of more time to the students for the construction of their own teaching materials.

Coordination of Federally Operated Programs of Instruction

The administration of programs operated by the Federal Government for the teaching of reading show the advantages of joint efforts. The Adult Education Branch of the Office of Education collaborates with other Federal activities, such as Model Cities; Manpower Development and Training; Neighborhood Service Programs; and Community Action Programs, including Head Start and VISTA. The Air Force literacy program (within Project 100,000) was taken from a course of instruction developed by Job Corps (page 28 , Magnitude of the Problem).

The Committee believes that existing Federal programs could serve as bases for improved educational practice and that such uses should be encouraged.

Dissemination of Information

The Bureau of Research, Office of Education, has established 19 clearinghouses under its ERIC program. One of these is specifically concerned with reading, while seven others have reading-related materials. ERIC services include the publication of "Research in Education" as a monthly abstract journal. Each issue contains citations and abstracts of research projects; documents acquired, reviewed, abstracted, and indexed by the clearinghouse; and bibliographies and interpretative research summaries prepared by the clearinghouse.

In 1962 a Presidential Task Force highlighted the need for a program "for the purpose of providing special educators and other related personnel with ready access to valid instructional materials and information for the education of handicapped children and youth." Acting on this recommendation, the Bureau of Education for the Handicapped has established 14 Instructional Materials Centers, one of whose major concerns has been materials for handicapped children. Numerous regional subcenters have been established to serve special educators directly by collecting, displaying, demonstrating, and lending instructional materials. Other services include information retrieval and dissemination, in-service workshops, and consultation in the development of curricula and in the design of research projects.

The Bureau of Research, Office of Education, has recently begun a special report service in order to facilitate communication between the researcher in the laboratory and the educator in the classroom. Called PREP (Putting Research Into Educational Practice), the reports are sent to cooperating agencies in the hope of strengthening state and local information services and effecting quicker adoption of tested educational innovations.

Coordination of Government Programs

At the end of this section is a table summarizing the various authorities and agencies under which a program related to reading problems may be funded. Clearly there is a wide range of possibilities. However, the Committee found it almost impossible to determine to what extent these programs are related to the specific problem of reading disorders, or even to the problem of reading itself. Recently there has been a tendency for reading disorders to be assigned to the area of "education for handicapped children." Yet there is at the present time no unanimity regarding what parts of the problem of learning disorders fit under the category of "other health impairment." Currently, only those involving a medical problem may be included. A committee of the Bureau of Education for the Handicapped has prepared a definition of "learning disability" which includes reading disorders, and it has recommended that programs for such children be included within the Bureau. Nevertheless, it is clear that a coherent program on reading disorders still does not exist; neither does there appear to be any central agency charged with the responsibility of monitoring or reviewing the total Federal program.

The Department of Health, Education, and Welfare has recently made some efforts to remedy this situation. The U.S. Office of Education's Bureau of Research has been supporting research on the Convergence Technique, a systematic collection of principles for the strategic planning of complex research efforts. The technique is applied by a small team of scientists, who represent an appropriate mixture of competencies and interests, and it attempts to focus efforts on those areas of research that are crucial. The resultant map, or Convergence Chart, becomes the basis for specifying needed research, for communicating findings, and for identifying progress toward the program goal.

The goal of the research program on the reading process is ambitious: "Proven ability to educate 95 percent of all ten-year-old school children to a criterion level of literate behavior." For planning the program, it is assumed that unlimited funds are available and that scientific considerations are the only factors involved.

The Bureau of Research would act to facilitate the efforts of other Federal agencies and private foundations to support research activities specified in the Convergence Chart. Such facilitation would take the form of communicating with others about new contract awards, new findings, and the results of the annual revision activities. The Convergence Chart itself is a part of the general literature available to the scientific community.

Conclusion

The national effort for the prevention and remediation of reading disorders is, within the country's school systems, a patchwork affair. States and local communities are experimenting with a diversity of strategies and procedures. The work of the school systems is complemented by various public and private agencies which offer an even greater variety of techniques to aid the failing reader.

At the national level there is a strong and growing effort to further scientific knowledge in this field, to improve the number and quality of teachers, and to develop effective community programs for the handicapped reader. This effort, however, is diffused throughout a large number of government agencies. At this time, there are only beginning signs of any coordination among the various arms of the Government involved in this effort. In fact, there exists no national program for reading disorders.

SECRETARY'S (HEW) NATIONAL ADVISORY COMMITTEE ON DYSLEXIA AND RELATED READING DISORDERS

FEDERAL LEGISLATIVE AUTHORITIES CONCERNED WITH FUNDING PROGRAMS RELATED TO READING DISORDERS

(REVISED May 16, 1969)

The attached chart indicates Federal legislative authorities under which a program related to reading problems may be funded. This inventory covers programs which have training or services as a primary objective but is not meant to be a comprehensive list of programs in which reading remediation isa secondary or incidental goal. Determination of eligibility for funding is subject to decisions by public officials in the bureaus responsible for program administration. Some programs under authorities noted (*) are discussed in the text.

FEDERAL LEGISLATIVE AUTHORITIES CONCERNED WITH FUNDING PROGRAMS RELATED TO READING DISORDERS (REVISED May 16, 1969)
(SERVICES)

	ACT	PURPOSE	WHO MAY APPLY	FOR INFORMATION CONTACT
* 1.	Vocational Rehabilitation Act, as amended	Support for diagnostic evaluation of disabled individuals aimed at assessing their vocational potential	Local vocational rehabilitation agencies	Rehabilitation Services Administration, Social and Rehabilitation Service, HEW Building, 3rd and "C" Streets, N.W. Washington, D.C. 20201
* 2.	National Defense Education Act,(P.L. 85-864)as amended Title V-A	Support for guidance, counseling and testing in schools	Public schools and non-public schools (the latter may participate only in the testing program)	State education agency or the Commissioner of Education FOB #6, 400 Maryland Avenue, S.W. Washington, D.C. 20202 if not covered by State agency's plan
* 3.	Elementary and Secondary Education Act [P.L. 89-759] Title VI-A	Grants to States for programs and programs and projects to meet the special educational needs of handicapped children	State and local public educational agencies	State education agency or the Division of Educational Services, Bureau of Education for the Handicapped, Office of Education, Regional Office Building, 7th and "D" Streets, S.W. Washington, D.C. 20201
* 4.	Elementary and Secondary Education Act (P.L. 89-313) Title I, sec. 103(a)(5)	Grants to state agencies directly responsible for providing free public education to handicapped children for programs and projects designed to meet the special educational needs of such children	State agencies directly responsible for providing free public education for handicapped children	State education agency or the Division of Educational Services, Bureau of Education for the Handicapped, Office of Education, Regional Office Building, 7th and "D" Streets, S.W. Washington, D.C. 20201
5.	Handicapped Children's Early Education Assistance Act, P.L. 90-538	Support for pre-school and early education programs for handicapped children	Appropriate public agencies and non-profit private organizations	State education agency or the Division of Educational Services, Bureau of Education for the Handicapped, Office of Education, Regional Office Building, 7th and "D" Streets, S.W. Washington, D.C. 20201

SERVICES FEDERAL LEGISLATIVE AUTHORITIES CONCERNED WITH FUNDING PROGRAMS RELATED TO READING DISORDERS (REVISED May 16, 1969)

	ACT	PURPOSE	WHO MAY APPLY	FOR INFORMATION CONTACT
*6.	Vocational Education Act of 1963 as amended, by (P.L. 90-576), Title I-B 8/22(c)(3)	Support for effective vocational education programs for the handicapped	Public and private schools, secondary and post-secondary level	State Vocational Director (new program to be funded FY 1970)
*7.	National Defense Education Act, P.L. 85-864, Title III	Grants to strengthen instruction in critical subjects, including reading	State educational agency	Commissioner of Education FOB #6, 400 Maryland Avenue, S.W. Washington, D.C. 20202 (no budget FY 1970)
8.	Elementary and Secondary Education Act (P.L. 89-10), as amended, Title V	Grants to strengthen State Departments of Education in terms of leadership resources, educational planning, storing and use of educational data, educational personnel training, etc.	State educational agencies	Commissioner of Education FOB #6, 400 Maryland Avenue, S.W. Washington, D.C. 20202
*9.	Public Library Services and Construction Act, (P.L. 89-511) Title IV-A	Grants to improve institutional library services operated or substantially supported by the State.	State library administrative agency through the State Plan mechanism	Commissioner of Education FOB #6, 400 Maryland Avenue, S.W. Washington, D.C. 20202
10.	Elementary and Secondary Education Act, (P.L. 89-10) as amended, Title II	Grants for school library resources, textbooks and instructional materials	Local educational agencies	State educational agency or the Commissioner of Education FOB #6, 400 Maryland Avenue, S.W. Washington, D.C. 20202
11.	Child Health Act, 1967, Title III, (amendments to the Social Security Act)	Support for early case finding and treatment of chronic organic conditions	State Health, Education, or Welfare Departments, institutions of higher education or Crippled Children's Agency	Children's Bureau, Department of Health, Education, and Welfare Regional Office
12.	Social Security Act, as amended, Title V, Section 503, 504	Support for diagnostic, evaluative and remedial services for children with handicapping conditions including "dyslexia"	State Health or Crippled Children's Agency through the State Plan mechanism. Special projects and training grants may be allocated to State Health Departments or institutions of higher learning.	Children's Bureau, Social and Rehabilitation Service, HEW Bldg. 3rd and "C" Streets, S.W. Washington, D.C. 20201
*13.	Elementary and Secondary Education Act, (P.L. 89-10) as amended, Title III	Support for innovative centers and services which meet special educational needs and hold promise of solving critical educational problems	Local education agencies	State educational agency or the Commissioner of Education, FOB #6, 400 Maryland Avenue, S.W. Washington, D.C. 20202

FEDERAL LEGISLATIVE AUTHORITIES CONCERNED WITH FUNDING PROGRAMS RELATED TO READING DISORDERS (REVISED May 16, 1969)

SERVICES

	ACT	PURPOSE	WHO MAY APPLY	FOR INFORMATION CONTACT
* 14.	Elementary and Secondary education Act, (P.L. 89-750) Title VI-B	Support for the establishment of regional resource centers to develop and apply the best methods of appraising the special educational needs of the handicapped and assist agencies in providing programs	State education departments, institutions of higher education or combinations thereof which can include local educational agencies	Office of the Associate Commissioner, Bureau of Education for the Handicapped, Office of Education, Regional Office Building 7th and "D" Streets, S.W. Washington, D.C. 20201
15.	Military Medical Benefits Amendments (1966) P.L. 89-614, (CHAMPUS Program)	Program of direct health benefits for members of the uniformed services and their dependents	Active duty and retired members of the uniformed services of the United States and their dependents	Executive Director, Office for the Civilian Health and Medical Program of the Uniformed Services, OTSG, Department of the Army, Denver, Colorado 80240
16.	Manpower Development Training Acts, (P.L. 87-415) (1962, 1966)	Support for Reading instruction and/or health services aimed at preparing the enrollee for employment	State Employment Services and Division of Vocational Education	Division of Manpower Training Bureau of Adult, Vocational and Library Programs, O.E. Regional Office Building 7th and "D" Streets, S.W. Washington, D.C. 20201
17.	Mental Retardation Facilities Construction Act, (P.L. 88-164)	Support for Instructional Materials Centers to assemble, evaluate and disseminate information on instruction materials to those concerned with the education of the handicapped	State education agencies, universities, and other public or private organizations	Division of Research, Bureau of Education for the Handicapped, Office of Education, Regional Office Building, 7th and "D" Streets Washington, D.C. 20201
* 18.	Adult Education Act of 1966 (P.L. 89-750) Title III,	Provide adult basic education, demonstration projects and teacher training	State Education Agencies, local educational agencies and other public or non-profit private agencies are eligible to participate	OE's Division of Adult Education Programs, Bureau of Adult, Vocational and Library Programs, ROB #3, 7th and "D" Streets, Washington, D.C.
* 19.	Elementary and Secondary Education Act--Title VII	Develop and demonstrate educational practices which show promise of reducing the number of children not completing school	Local school districts in low income areas and with high percentages of dropouts	State education agency and OE's Division of Plans and Supplementary Centers, Bureau of Elementary & Secondary Education, 400 Maryland Avenue, S.W., Washington, D.C. 20202

FEDERAL LEGISLATIVE AUTHORITIES CONCERNED WITH FUNDING PROGRAMS RELATED TO READING DISORDERS (REVISED May 16, 1969)

SERVICES	ACT	PURPOSE	WHO MAY APPLY	FOR INFORMATION CONTACT
*20.	Elementary and Secondary Education Act--Title VII (Bilingual Education Act)	Develop and operate new programs to aid children aged 3 - 18 who have limited English-speaking ability and come from another language environment	Local education agencies or institutions of higher education applying jointly with local education agencies	State education agencies and OE's Division of Plans and Supplementary Centers, Bureau of Elementary & Secondary Education, 400 Maryland Ave., S.W., Washington, D.C. 20202
*21.	Elementary and Secondary Education Act (P.L. 89-10) Title 1	To meet special educational needs of educationally deprived children	Local school districts	State Education agencies Division of Compensatory Education, Bureau of Elementary&Secondary Education, Washington, D.C. 20202
*22.	Elementary and Secondary Education Act, Title I, Section 103(a) (6), 105 (c)	To improve the education of children of migratory agricultural workers	State Educational agencies	State education agencies Division of Compensatory Education Bureau of Elementary&Secondary Education, 400 Maryland Avenue S.W., Washington, D.C 20202
*23.	Elementary and Secondary Education Act	To provide additional educational assistance to Indian children in Federally operated schools	Bureau of Indian Affairs Schools	Bureau of Indian Affairs, Department of Interior 1951 Constitution Avenue, N.W. Washington, D.C.
*24.	Elementary and Secondary Education Act, Title I, Section 103 (a) (7)	To meet the special educational needs of neglected and delinquent children through programs and projects.	State agencies directly responsible for providing free public education for children in institutions operated or supported by state agencies	State Education Agency Bureau of Elementary&Secondary Education, 400 Maryland Avenue, S.W. Washington, D.C. 20202

FEDERAL LEGISLATIVE AUTHORITIES CONCERNED WITH FUNDING PROGRAMS RELATED TO READING DISORDERS (REVISED May 16, 1969)
(TRAINING)

	ACT	PURPOSE	WHO MAY APPLY	FOR INFORMATION CONTACT
1.	Teacher-Training in the Field of the Handicapped (P.L. 85-926) as amended	Support for training teachers and specialists for the handicapped or their supervisors, and for training of professional personnel to conduct the training of teachers in the field of education for the handicapped.	Institutions of higher education and State educational agencies (fellowship applicants contact these agents)	Division of Training Programs, Bureau of Education for the Handicapped, Office of Education Regional Office Building 7th and "D" Streets, S.W. Washington, D.C. 20201
2.	Media Services and Captioned Films (P.L. 85-905) as amended	Support for training specialists in the use of educational media for the handicapped	Public and private agencies	Division of Educational Services, Bureau of Education for the Handicapped, Office of Education Regional Office Building 7th and "D" Streets, S.W. Washington, D.C. 20201
3.	Higher Education Act, (P.L. 89-329) Title V-E	Fellowships for training higher education personnel in areas of critical manpower shortages	Institutions of higher education	Division of Graduate Programs, Bureau of Higher education, Office of Education, Regional Office Building, 7th and "D" Streets, S.W. Washington, D.C. 20201
* 4.	National Defense Education Act, (P.L. 85-864) Title IV	Graduate fellowships to increase the number of college and university teachers	Institutions of higher education	Division of Graduate Programs Bureau of Higher Education, Office of Education, Regional Office Building, 7th and "D" Streets, S.W. Washington, D.C. 20201
* 5.	Higher Education Act, (P.L. 89-329) Title V-E	Support for institutes and short term training for higher education personnel	Institutions of higher education	Division of College Support, Bureau of Higher Education, Office of Education, Regional Office Building, 7th and "D" Streets, S.W. Washington, D.C. 20201
* 6.	Higher Education Act, (P.L. 89-329) Title V-E	Support for innovative projects for training higher education personnel	Institutions of higher education	Division of College Support, Bureau of Higher Education, Office of Education, Regional Office Building, 7th and "D" Streets, S.W. Washington, D.C. 20201

FEDERAL LEGISLATIVE AUTHORITIES CONCERNED WITH FUNDING PROGRAMS RELATED TO READING DISORDERS (REVISED May 16, 1969)

TRAINING

	ACT	PURPOSE	WHO MAY APPLY	FOR INFORMATION CONTACT
7.	Higher Education Act, P.L. 89-329 Title V-C	Support for the upgrading of teaching knowledge and skills of those planning or pursuing a career in teaching or guidance (elementary or secondary)	Institutions of higher education	Division of Program Administration, Bureau of Education Personnel Development, Office of Education Regional Office Building 7th and "D" Streets, S.W. Washington, D.C. 20201
* 8.	Education Professions Development Act, P.L. 90-35, Parts C & D	Support for fellowships and training institutes for a broad spectrum of "related educational personnel" (from sociologists to teacher aids)	Institutions of higher education (fellowships and institutes), State or local education agencies (institutes only)	Division of Program Administration Bureau of Education Personnel Development, Office of Education Regional Office Building 7th and "D" Streets, S.W. Washington, D.C. 20201
9.	Public Health Service Act, as amended, section 306, 309	Support for short term training for professional health personnel to make public health programs function more effectively	Public or non-profit institutions	Division of Allied Health Manpower, Bureau of Health Manpower, National Institutes of Health Bldg. 31, 9000 Rockville Pike Bethesda, Maryland 20014
* 10.	Education Professions Development Act, P.L. 90-35, Part B 2	Support for recruitment and training of personnel for teaching careers and as teacher aids and tutors in critical shortage areas	State or local education agencies	Bureau of Education Personnel Development, Office of Education Regional Office Building 7th and "D" Streets, S.W. Washington, D.C. 20201
11.	Elementary and Secondary Education Act, P.L. 89-750 Title VI-D	Support for improved recruitment of educational personnel and dissemination of information on education of the handicapped	Public or private non-profit institutions	Office of the Commissioner, Bureau of Education for the Handicapped, Office of Education Regional Office Building 7th and "D" Streets, S.W. Washington, D.C. 20201

FEDERAL LEGISLATIVE AUTHORITIES CONCERNED WITH FUNDING PREOGRAMS RELATED TO READING DISORDERS (REVISED May 16, 1969)
(RESEARCH)

	ACT	PURPOSE	WHO MAY APPLY	FOR INFORMATION CONTACT
1.	Mental Retardation Facilities Construction Act, (P.L. 88-164) Title III, Section 302	To conduct research and related activities in the field of education for handicapped children.	States, state or local educational agencies, public or private institutions of higher education, public or private educational or research agencies, and organizations.	Division of Research, Bureau of Education for the Handicapped, Office of Education Regional Office Building 7th and "D" Streets, S.W. Washington, D.C. 20201
* 2.	Cooperative Research Act (P.L. 83-531)	Research, survey and demonstration in the field of education and dissemination of information derived therefrom	Universities, colleges, public and private agencies, institutions and organizations and individuals	Bureau of Research 400 Maryland Avenue, S.W. Washington, D.C. 20202

TOWARD A NATIONAL PROGRAM

Failure to learn to read ranks among the most serious educational problems confronting the nation. About 15 percent of the children in our elementary and secondary schools are seriously handicapped in the basic skill of reading.

Reading disorders impose incalculable social and economic consequences. They represent a significant factor in the high rate of emotional maladjustment, school dropouts, and juvenile delinquency. They contribute appreciably to social welfare costs and to serious losses of economic and military manpower. They represent a waste of human resources which our country can no longer afford. A national program emphasizing the prevention of reading failure must be given high priority.

In spite of the Federal Government's expenditure of millions of dollars for research in reading, many basic questions about the nature of the process of learning to read and the causes of reading disorders remain unanswered. This unsatisfactory state of affairs is due in part to the lack of any comprehensive and systematic research strategy and to the absence of any mechanism for the coordination and integration of research findings. Concurrently, although a great diversity of instructional and remedial programs have been developed, there is little evidence of their effectiveness. Families and school systems over the country are spending large amounts of money on procedures which often prove inefficient or futile.

Solutions to some of the basic problems involved in the development of more effective methods of instruction in reading and in the prevention and remediation of reading disorders will require carefully planned and systematic research strategies and the coordination of research programs.

The first steps to be taken are to coordinate the scattered, limited knowledge that already exists on the prevention and remediation of reading disorders and then to set up the machinery for undertaking the kinds of investigation that will accomplish these purposes. Therefore, it is essential that the Office on Reading Disorders be established to fill that role.

The writing and dissemination of guidelines should proceed immediately. These should be followed by the selection of the Operational Reading Research and Development Centers. It is important that substantive areas of research and professional training be indicated as top priority in the "Request for Proposals" relating to the establishment of Centers. This will ensure, among those subsequently funded, enough duplication to yield reliability, but allow enough variation to furnish knowledge on each of the many aspects of the reading problem.

Funding of the Centers might begin during the second half of the first year of the program, with the number of Centers in operation increasing steadily in the second and third year. The Operational Centers should have plans worked out for a three-year period. A precise timetable cannot, of course, be specified. In general, the three-year period should help move the Centers from the pursuit of substantive knowledge and implementation on a limited scale to implementation on a broad front that will include schools and related agencies.

Thus, it is essential that the Operating Centers see their work as evolving from modest beginnings. These might include a concern of each with effective preschool intervention programs. The effects of one or two specific programs could be studied over a given number of years. In later stages, the emphasis might turn to how an effective program might be generalized and to how teachers might be trained to carry it out. The ultimate implementation would be the large-scale testing of the program in one or two school districts, then in a geographic region, then nationally.

It will be essential that each Center see its work as only one part of a research and development program that, in the aggregate, will have an impact upon the nation. Although the individual concern of the Centers will be with the development of methods of prevention and remediation of reading problems, their ultimate concern should be with the wide-scale implementation of these methods in the schools, in teacher-training institutions and in every aspect of the national educational complex. Not only schools but also the publishing and educational equipment industries, public libraries, and the mass communications media can play a role in this implementation.

Concurrent with the establishment of the Office on Reading Disorders, the recommendations set forth in this report with respect to

the award of contracts and grants for research and for programs of manpower development should proceed under the various existing authorities and within the missions of the appropriate agencies of the Department.

In developing a suggested three-year budget, the Committee has attempted to make each of its recommendations on funding levels commensurate with an analogous experience within the Federal Government and, when possible, with present legislative authorities.

The Committee estimates that its recommendations would require $8,675,000 in the first year, $16,225,000 during the second year of operation, and $27,400,000 in the third budgeted year of the program. In the third year the projected expenditure is equivalent to spending three dollars for each child with a reading disorder. The three-year recommended budget is tabulated at the end of this section.

Recommendation I, Creation of the Office on Reading Disorders, with its staffing, logistical support, travel, and other costs of the National Advisory Council have been estimated at $400,000 for the first year, $600,000 for the second, and $800,000 during the third year of operation. These figures are from a general survey of costs of similar staff-advisory operations elsewhere in government.

The Office on Reading Disorders, in addition to its basic coordination role, may be assigned additional responsibilities, some of which might include other facets of the recommended program. For convenience those other recommendations and their estimated budgets have been grouped as follows:

The Model Classrooms [Recommendation III B (2)] would require $125,000 in the first year of operation, increase to $375,000 in the second year and to $1,250,000 in the third. Past experience has indicated that a Model Classroom Unit is most effective if it includes four classes--one each at preschool, early primary, primary, and intermediate levels.

Each classroom setting in the unit of four costs approximately $31,125 per year for staff, equipment, and administration. Thus, the Committee recommends funding one four-unit Model Classroom project the first year; three projects the second; and ten, perhaps one in each Federal Region, in the third year.

Evaluation of instructional materials [III B (3)], which might become another responsibility of the Office on Reading Disorders, has been allocated $500,000, $1,000,000, and $1,500,000 during the three successive years. Estimates have been based on experience in government demonstrating that the average cost of a thorough scientific study in similar areas is approximately $250,000. Two such studies could be undertaken in the first year, four in the second year, and six in the third year.

Costs of studies of the utilization of paraprofessionals and volunteers in reading programs [III B (5)], which the Office might supervise, have been estimated at $250,000 annually for the three years. It is suggested that in each year a separate study might be made in distinctly different ethnic situations, perhaps coordinated with the work of three of the Centers.

The Committee also suggests that the Office might be responsible for supervising demonstration grants for professional training [III B (4)] and should have funds available each year to respond to innovative proposals from institutions. Levels of $1 million, $2 million, and $3 million per year during the recommended program have been suggested in keeping with the relative proportion of demonstration grant funds to operational monies in other Federal programs.

The Committee also sees the possibility that the responsibility for conducting or contracting for Workshops for Educational and Health Professions at the Regional level [III B (12)] and Workshops for Health Professions at the national level [III A (13)] might at some future time be assigned to the Office. Based on an average cost of $10,000 to conduct such a session, the Committee recommends ten workshops a year in each category, for an annual budget of $200,000.

The Research Centers (Recommendation II) represent the core of the Committee's recommendations. Based on contractual experience with similar research programs, the estimated annual cost of each Center recommended in this report would be $400,000. Taking into account the period necessary to prepare guidelines, solicit proposals, and evaluate submissions, the Committee estimates that $1 million would be sufficient to fund the Centers program in the first year. Five Centers in operation during the second year would require $2 million, and a capability for operating 15 such Centers by the third year would require $6 million.

The largest and potentially the most important budgeted item among the Committee's recommendations would be the funding of fellowships and institutes in reading instruction for the teaching professions. The Committee believes that funds should be sought under existing authority of the Education Professions Development Act [III B (11)]. The suggested funding levels for each of the three years would be $3.5 million, $7 million, and $10.4 million. These graduated levels have been based on an accepted annual cost of $8,700 per fellowship and the guidelines which recommended that no more than 20 fellowships be allocated a single university. The Committee believes that perhaps 60 universities can currently offer appropriate graduate level work in reading instruction.

Two of the Committee's recommendations might be funded through existing programs of the Bureau of Research in the Office of Education, coordinated by the Office on Reading Disorders. In establishing standards of literacy [III B (7)] and developing preschool language programs [III B (6)], the Committee believes the special skills and related research of that Bureau would add to the effectiveness of the recommendations. The Committee estimates that $200,000, $300,000, and $500,000 could be devoted in each of the three years to research into standards on the basis of comparable work being done. A funding level of $250,000 in each of the three years would be adequate in the area of studies of preschool language development.

The recommendation on the vocational and career opportunities for persons with reading disorders [III B (9)] might be administered by the Rehabilitation Services Administration. The Committee believes $250,000 could well be spent in each of the three years in exploring the potential career opportunities for handicapped readers.

Implementation of the Committee's recommendations on providing compensation for Federal teachers who develop special competency and qualify for difficult assignments in the teaching of reading [III B (14)] requires support from other agencies. Approximately 10,000 teachers in schools of the Bureau of Indian Affairs, the Bureau of Prisons, the D.C. Government, Job Corps, and the Overseas Dependent Schools of the Department of Defense might be affected by new qualification standards.

The increment which would be provided under the new standards of the Civil Service Commission would be approximately $1,000 annually. The Committee estimates that 10 percent of the eligible teachers would qualify in each of the three budgeted years. On that basis, the Committee recommends support for increased appropriations to the Departments and Agencies concerned of $1 million the first year, $2 million the second, and $3 million in the third year.

None of the other recommendations herein contemplate expenditures of Federal funds. They emphasize cooperative action with the states, with private organizations, and among existing Federal programs.

In relation to the total national expenditure on education, these recommendations make but small financial demands. Yet the Committee firmly believes this investment will pay enormous dividends to the nation in the impact for good on the one child in seven in our schools today suffering from some form of reading disorder.

The recommendations, and the modest, three-year budget suggested to implement them, will not constitute a National Reading Program. But they do represent the carefully selected seeds from which such a desperately needed program can begin to grow in ensuing years. These suggestions will produce sound, reliable, and cumulative data on the reading process. They will identify the procedures which work best with each category of children suffering from reading disorders. They will create the approaches to the instruction in the teaching of reading which will fill the vast manpower gaps in our educational structure. They will permit the Federal government and school administrators--for the first time--to invest present and future funds in reading programs with real promise of performance.

American genius in business and public administration, in the sciences and professions, has evolved a process for change over the years which represents the best return in dollar investment in the solving of any problem. Identification and definition, well-financed cumulative research and, finally, development of personnel and technical resources have provided the basis for most of the major breakthroughs in science, industry, and government which have marked America's progress over the years. The recommendations outlined herein offer, for the first time, an opportunity to apply the same successful approach to the problem of reading disorders.

The products of this research and development program will give the nation's schools what they have so long lacked--the tools to mount a truly effective national reading program. The products of the systematized research and the development of procedures and teaching curricula which will emerge can permit Federal, state and local investment in reading instruction to be made, after the next three years, in full confidence of a substantial return on that investment.

Given this research and development program, and its subsequent implementation on a broad scale in our schools, the Committee can envision the day, perhaps within ten years, when every American child capable of learning to read will acquire that essential skill.

A society which demands so much of its youth can do no less than provide each of them with the essential skills to meet those demands--and none is more basic than reading.

Proposed Budget for Programs Recommended by the Secretary's (HEW) National Advisory Committee on Dyslexia and Related Reading Disorders

Recommendations	Year 1	Year 2	Year 3
1. Items related to organization of ORD			
I. Office on Reading Disorders	$ 400,000	$ 600,000	$ 800,000
II. Reading R & D Centers	1,000,000	2,000,000	6,000,000
2. Specific project items to be authorized and assigned			
III B (2) Model Classrooms	125,000	375,000	1,250,000
III B (3) Evaluation-Materials	500,000	1,000,000	1,500,000
III B (5) Paraprofessional Use	250,000	250,000	250,000
III B (4) Professional Training	1,000,000	2,000,000	3,000,000
III B (12) Regional Workshops	100,000	100,000	100,000
III B (13) National Workshops	100,000	100,000	100,000
3. Items related to Bureau of Educational Personnel			
III B (11) Fellowships	3,500,000	7,000,000	10,400,000
4. Items related to Bureau of Research			
III B (6) Preschool Language	250,000	250,000	250,000
III B (7) Standards of Literacy	200,000	300,000	500,000
5. Items related to Rehabilitation Services Administration			
III B (9) Vocational and Career Aspects of Reading Disorders	250,000	250,000	250,000
6. Items other than HEW			
III B (14) Compensation	1,000,000	2,000,000	3,000,000
	$8,675,000	$16,225,000	$27,400,000

Beyond the third year, expenditures will shift increasingly into categories dealing with evaluation, dissemination, and implementation.